CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Environment Sciences
Department of Landscape and Urban Planning

Master's Thesis

Choose your future: the dialogue between different stakeholders in a participatory design process of urban greening projects in multicultural environment

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DIPLOMA THESIS ASSIGNMENT

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Landscape Engineering
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Thesis title

Choose your future: the dialogue between different stakeholders in a participatory design process of urban greening projects in multicultural environment

Objectives of thesis

The thesis aims to emphasize the significance of considering both diverse cultural backgrounds and spatial characteristics in the design of open spaces through participatory processes.

Through the investigation, the objective of this thesis is to answer the main research question.

MRQ: How can civic participation among multinational neighborhoods be encouraged in participatory design processes for urban greening projects?

The sub-research questions are posed because their outcomes hold paramount significance in addressing the central research question.

SRQ1: Which techniques can be used by design professionals navigating the complex dynamics of participatory design processes held in multicultural environment?

SRQ2: What factors influence community participation in participatory design processes within multicultural environments in urban greenery projects led by designers?

Methodology

This thesis employs several research approaches. Research on Design methodology was used to focus on comparative case studies of De Peperklip (the Netherlands) and Superkilen (Denmark), which utilize participatory design processes in multicultural contexts during the design of open spaces / shared spaces. By examining these case studies, the thesis aims to highlight the aspects such as transdiscplinarity, that is important to consider during participatory design processes that has culturally diverse participants.

The second approach is related to the Research for Design methodology, which is needed to understand the complexities of the participatory design process; a set of interviews was conducted with crucial stakeholders engaged in the De Peperklip project in the Netherlands. This study's findings indicate the difficulties landscape architects and urban designers could face in participatory design in diverse cultural neighborhoods. This understanding is crucial for informing and enhancing future projects to create comfortable and inclusive spaces for all.

**The proposed extent of the thesis**

65 pages

Keywords

participatory design, multicultural environment, urban green spaces, transdisciplinary approach, urban resilience

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Recommended information sources

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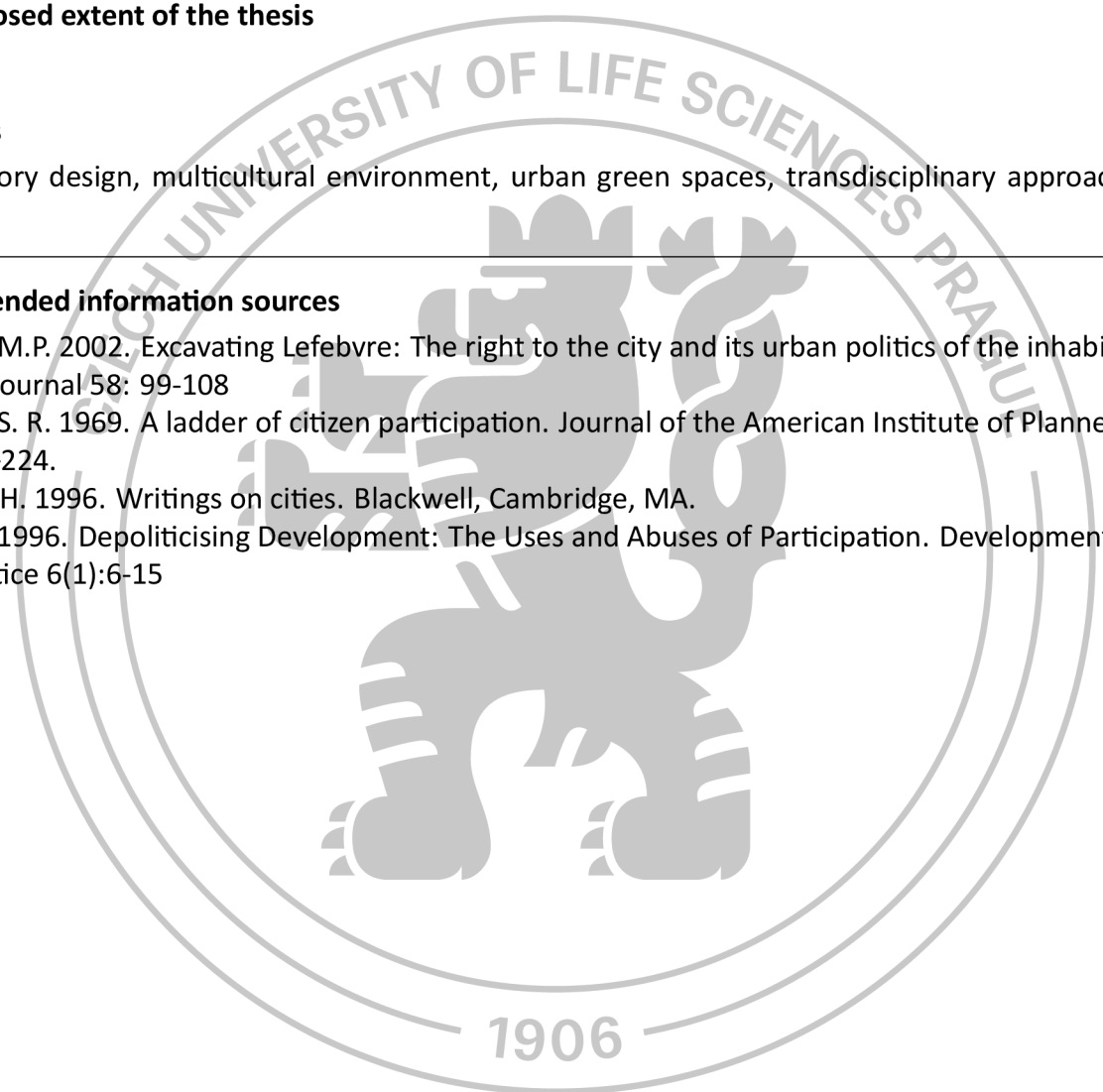
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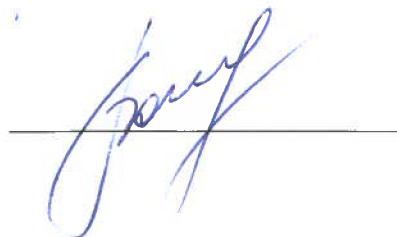
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Dean

Prague on 27. 03. 2024

DECLARATION

I hereby declare that the work presented in this thesis entitled 'Choose your future: the dialogue between different stakeholders in a participatory design process of urban greening projects in multicultural environment' is original and done by me independently, under the direction of doc. Peter Kumble. I have listed all literature and publications from which I acquired information in the attached list of references at the end of the thesis. I declare that I have used AI tools in accordance with the university's internal regulations and principles of academic integrity and ethics.

In Prague on 28.03.2024

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ABSTRACT

The built environment is undergoing significant transformation due to increasing urbanization and the impacts of climate change, further complicated by the rising of urban migration. The densification of urban spaces emphasizes the considerable role of green areas in maintaining the quality of life for those living in a city. Landscape architects and urban planners face complex challenges in addressing these shifts, requiring transdisciplinary approaches that involve non-academic stakeholders in knowledge production. A vital aspect of this approach is participatory design, where governmental entities, designers, and stakeholders collaborate to meet end-user needs. This is particularly crucial in multicultural environments, where diverse cultural backgrounds impact interpersonal relations. However, integrating people into the planning process requires understanding each location's unique social and spatial context. This thesis employs several research approaches. Research on Design methodology was used to focus on comparative case studies of De Peperklip (the Netherlands) and Superkilen (Denmark), which utilize participatory design processes in multicultural contexts during the design of open spaces / shared spaces. By examining these case studies, the thesis aims to highlight the aspects such as transdiscplinarity, that is important to consider during participatory design processes that has culturally diverse participants. The second approach is related to the Research for Design methodology, which is needed to understand the complexities of the participatory design process; a set of interviews was conducted with crucial stakeholders engaged in the De Peperklip project in the Netherlands. This study's findings indicate the difficulties landscape architects and urban designers could face in participatory design in diverse cultural neighborhoods. This understanding is crucial for informing and enhancing future projects to create comfortable and inclusive spaces for all.

Keywords: participatory design, multicultural environment, urban green spaces, transdisciplinary approach, urban resilience

ABSTRAKTNÍ

Zastavěné prostředí prochází významnou proměnou v důsledku rostoucí urbanizace a dopadů změny klimatu, kterou dále komplikuje nárůst migrace. Zahušťování městských prostor zdůrazňuje významnou roli zelených ploch při zachování kvality života obyvatel města. Krajinní architekti a urbanisté čelí složitým výzvám při řešení těchto posunů, které vyžadují transdisciplinární přístupy, které do vytváření znalostí zapojují neakademické subjekty. Klíčovým aspektem tohoto přístupu je participativní design, kde vládní subjekty, designéři a zúčastněné strany spolupracují na plnění potřeb koncových uživatelů. To je zvláště důležité v multikulturních prostředích, kde různé kulturní zázemí ovlivňuje mezilidské vztahy. Integrace lidí do procesu plánování však vyžaduje pochopení jedinečného sociálního a prostorového kontextu každého místa. Tato práce využívá několik výzkumných přístupů. Metodologie Research on Design se zaměřila na srovnávací případové studie De Peperklip (Nizozemsko) a Superkilen (Dánsko), které využívají participativní designové procesy v multikulturních kontextech. Zkoumáním těchto případových studií byl zdůrazněn význam zohledňování kulturní rozmanitosti a prostorových charakteristik při navrhování otevřených prostor prostřednictvím participativních procesů. Druhý přístup souvisí s metodologií Research for Design, která je potřebná k získání hlubšího vhledu do složitosti procesu participativního navrhování, byla provedena řada rozhovorů s klíčovými zainteresovanými stranami zapojenými do projektu De Peperklip v Nizozemsku. Zjištění této studie naznačují obtíže, s nimiž se mohou zahradní architekti a urbanisté potýkat v rámci participativního navrhování v rozmanitých kulturních čtvrtích. Toto porozumění je klíčové pro informování a zlepšování budoucích projektů zaměřených na vytváření pohodlných a inkluzivních prostor pro všechny.

Klíčová slova: participativní design, multikulturní prostředí, městské zelené plochy, transdisciplinární přístup, městská odolnost

LIST OF ABBREVIATIONS

UGS Urban Green Space

RFD Research For Design

ROD Research On Design

RTD Research Through Design

SDGs The Sustainable Development Goals

UN United Nations

WHO World Health Organisation

WTO World Trade Organisation

AR Augmented reality

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION

Built environments are undergoing a significant transformation, marked by the dual phenomena of escalating urbanization compounded by climate change. One of globalization's most significant results and aspects is the steep rise of migration. Presently, an estimated 281 million people, comprising approximately 3.6% of the global population, currently live outside their native country, with a significant amount of them experiencing migration marked by differing levels of necessity or compulsion (United Nations Human Rights, n.d.). The increasing impacts of climate change have become an increasingly important driver of human mobility, as pointed out in the report by the United Nations (United Nations Human Rights, n.d.). In tandem with these shifts, the densification of urban spaces emphasizes the significant role of green areas in maintaining the quality of life for those living in a city.

Landscape architects and urban planners increasingly find themselves at the forefront of evolving open space utilization, facing many intricate tasks and challenges. As a diverse array of users participate in using these spaces, addressing the challenges posed by open spaces necessitates transdisciplinary approaches. Trans-disciplinarity is commonly described as the involvement of non-academic stakeholders in producing knowledge (Scholz & Steiner, 2015). A vital factor of the transdisciplinary approaches involves incorporating a participatory process, wherein governmental entities, designers, and non-academic stakeholders actively engage in collaborative tasks. The participatory approach is the best strategy for meeting end-users' needs and ensuring success in designing and activating social spaces that connect people with green areas in cities. These aspects become increasingly significant in densely populated urban environments experiencing a growing occurrence of multiculturalism. In these multicultural environments, residents from various regions around the globe actively contribute to the social vibrancy of urban areas. Thus, a multicultural environment plays a significant role in the engagement process since cultural aspects impact interpersonal relations within diverse communities differently. The social and spatial context of each participation process differs, meaning that each approach to integrating people into the planning process has unique circumstances and, therefore, is like any other case. It's unknown who participates and on which level they should be engaged in the design process in the non-homogenous cultural environment. Ignoring the uniqueness of each location can lead to an abuse of this term (White, 1996). Following the examination of literature highlighting the limited research on this subject, the present thesis employs Research on Design methodology, focusing on comparative case studies of De Peperklip (the Netherlands) and Superkilen (Denmark). Each case study employs a participatory design process within a multicultural context, utilizing urban green spaces as public realms to forge connections among people. The projects are completed and documented through diverse materials, including design reports, interviews with various stakeholders, and videos. These records capture the procedures and outcomes shared for examination to evaluate their impact.

Additionally, a series of interviews were carried out with key stakeholders involved in De Peperklip project in the Netherlands to delve deeper into the details of the participatory design process. The study's results highlight the challenges that landscape architects and urban designers might encounter when working on participatory design initiatives within culturally diverse neighborhoods. This comprehension is essential for guiding and improving future projects to develop welcoming and inclusive environments for everyone involved.

CHAPTER 2. OBJECTIVES OF STUDY

The thesis aims to emphasize the significance of considering both diverse cultural backgrounds and spatial characteristics in the design of open spaces through participatory processes.

Through the investigation, the objective of this thesis is to answer the main research question.

MRQ: How can civic participation among multinational neighborhoods be encouraged in participatory design processes for urban greening projects?

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CHAPTER 3. LITERATURE REVIEW

3.1. MULTICULTURAL ENVIRONMENT

Contemporary societal dynamics are marked by significant transformations, including the continuous trend of increasing globalization. The concept of globalization was shaped after the Second World War providing for the creation of an "open and integrated economy" (*World Trade Report, 2023*). According to David Held et al. (1999) globalization is defined as "widening, deepening and speeding up of worldwide interconnectedness in all aspects of contemporary social life, from the cultural to criminal, the financial to spiritual". This global phenomenon is linked to increasing of volume, variety, geographical range, and overall complexity of global migration (Czaika & De Haas, 2014). Based on the United Nations' data, approximately 3.6% of the globe population currently resides outside their nation of origin (United Nations Human Rights, n.d.). Throughout history, human beings have been characterized by migrating and exploring new territories. However, the globalization processes force international migration for diverse reasons such as increased effortless mobility because of technological revolution, labor market segmentation, political shifts as well as climate change.

There are various studies that conclude the direct influence of globalization to the increasing of CO_2 emissions, contributing to climate change and degradation of environment in general (Mehmood & Tariq, 2020; Wu et al., 2022). This results in a rise in the number of extreme weather conditions such as floods, drought, wildfires and storms, which makes life on Earth more challenging to sustain, as seen in Figure 1. The prevalence of news on extreme weather conditions and degradation of ecosystems forces people to leave their homes, relocating to different cities and even countries. As per the United Nations Refugee Agency's report in 2022, 84% of refugees and asylum seekers came from countries highly affected by climate issues, which is more than the 61% recorded in 2010 (UNHCR, n.d.). For example, five of the Solomon Islands have disappeared due to sea level rise, causing the washing away of eleven houses and turning the communities on these islands into climate refugees (Albert et al., 2016). More people are expected to become climate refugees in the future. The Institute for Economics and Peace predicted that "1.2 billion people could be displaced by 2050 due to natural disasters and other ecological threats in the worth-case scenario" (Apap & Harju, 2023). As a landscape architect, understanding these global shifts is essential for understanding the complexities of modern design and planning, particularly in addressing the challenges posed by climate-induced migration and its implications for the built environment.

Climate change along with factors such instability and requirements in the labor market, contributes to increased rates of international migration and creates multicultural urban environment. While diversity generates vast number of possibilities and opportunities, it also brings some challenges for urban policies, including cultural or language barriers, social inequalities, and a shortage of affordable housing. These consequences of multiculturalism highlight the need for significant changes of cities towards multicultural societies to satisfy the migrant's needs.
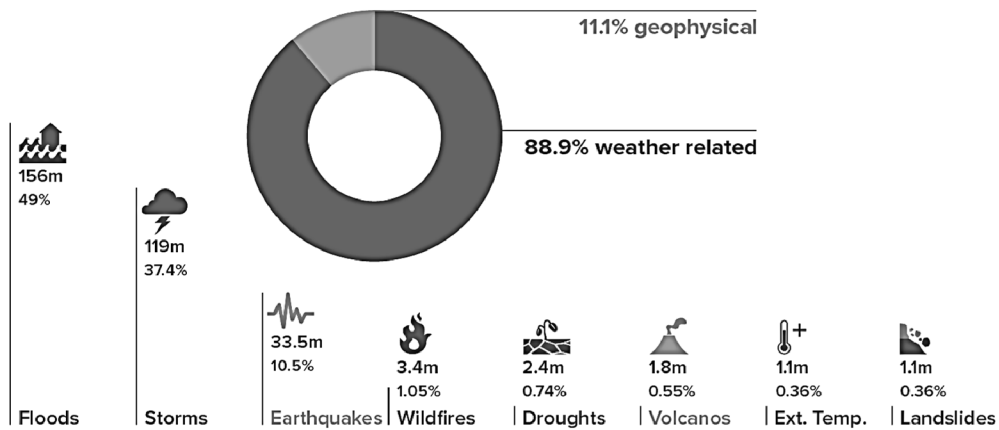
Figure 1. International Displacement Monitoring Centre. (2021). *New displacements by disasters: breakdown by hazards (2008-2020)*. [Infographic]. Global Report on Internal Displacement 2021. https://shorturl.at/bdOY0

The context for a multicultural environment refers to the complex and diverse circumstances, settings, and conditions within which individuals from various cultural backgrounds interact. This environment is characterized by Hicks et al., (2016) the coexistence of multiple cultural groups, each contributing unique elements to the overall social and spatial fabric.

In a broader context, rapid population growth and migration correlate with the expansion of urbanization (Tacoli et al., 2014). Currently, about 55% of the global urban population resides in urban settlements, and this proportion is expected to rise to 68% by the year 2050 (UN Department of Economic and Social Affairs, 2018).
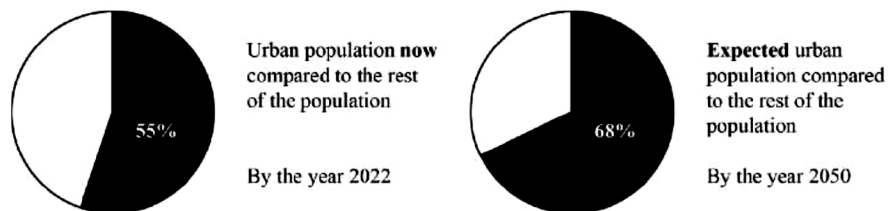
Figure 2. World Urbanization Prospects. (2018). *Population Division*. [Diagram]. Population UN. shorturl.at/dvyGH

Urban areas, towns, and settlements are growing rapidly, which creates both positive impacts, such as economic growth and technological development, and negative, such as overcrowding, urban heat island effect, or social inequality. In achieving sustainable and inclusive urban development, it is important to recognize the consequences for the urban population increasing. Understanding the context for a multicultural environment is essential for creating inclusive and responsive policies, designs, and interventions. It involves recognizing the richness of cultural diversity while addressing challenges related to integration, communication, and the coexistence of multiple worldviews within a shared space. A thoughtful consideration of this context helps promote harmony, mutual understanding, and a sense of belonging among individuals from diverse cultural backgrounds. Thus highlights the significance of involving people in the decision-making process to ensure informed and participatory approaches.

1900	2 out of every 10 people lived in an urban area
1990	4 out of every 10 people lived in an urban area
2010	5 out of every 10 people lived in an urban area
2030	6 out of every 10 people will live in an urban area
2050	7 out of every 10 people will live in an urban area

Figure 3. World Population Projections. (2016). *Population Projections.*
[Diagram]. UN Department of Economic and Social Affairs. shorturl.at/acoUX

3.2. GREEN SPACES AS SOCIAL SPACES FOR PUBLIC REALMES

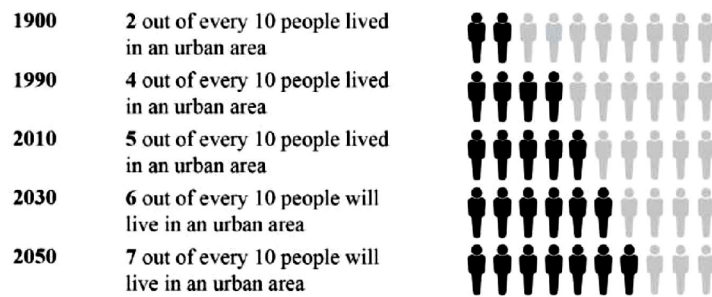With the densification of the urban spaces, increasing impacts of climate change, and people's constant need for connectivity with nature it has become vital to keep the liveliness of cities. The awareness of the advantages of green spaces for both humans and nature is rapidly increasing among academic research and policy principles. Within urban settings, green areas offer direct benefits for people, such as places for social interactions, workouts, educational programs, rest, and leisure. Indirectly, they contribute to emotional restoration, reduction of stress levels, as well as decreased risk of obesity. City parks, community gardens, green roofs, and other urban green spaces positively influence urban biodiversity, air quality, noise reduction, and temperature moderation during heatwaves (European Environment Agency, 2022). Introducing new open spaces and improving the existing recreational areas can negotiate the results of rapid urbanization, improve ecological and socio-economic issues that exist in urban areas and thereby improve people's living conditions (Heidt & Neef, 2008). The combination of all these factors contributes significantly to the increase of urban resilience.

Overview of Urban Green Spaces

Encouraging access to green spaces in urban green areas is essential for achieving environmental justice and harmony with the aims outlined in the United Nations Sustainable Development Goals (SDGs). According to the Report of the General Assembly Economic and Social Council (2023), open public spaces constitute just 3.2 percent of urban land on average, which is approximately four times less than the proportion allocated to streets. The 2030 Agenda for Sustainable Development (UN Department of Economic and Social Affairs, 2016) includes the SDG 11 target of 11.7.1 "average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities". It requires the creation more urban green areas to negotiate the results of rapid urbanization and improve ecological and socio-economic issues.

The highly significant role of green areas within urban landscapes has been proved by various researchers, including Hickman (2013) and Sadler et al. (2010). However, no generally accepted definition of urban green space (UGS) exists, given its diverse applications across scientific disciplines. World Health Organisation (2016) defined urban green areas as places with natural surfaces or settings. This can include features like street trees and even "blue space," which involves water elements like ponds or coastal zones. The most common types of UGS are public

parks, woodlands, riverside floodplains, children's playgrounds as well as private gardens and, sports pitches, and so on.

In the context of this thesis, UGS is delineated according to Wu's definition (1999, as cited in (Manlun, 2003) as including both natural vegetation and human-maintained greenery within urban and planning areas. From the perspective of landscape architecture, the significance of UGS in densely populated urban environments cannot be overestimated, owing to its manifold advantages for both the urban environment and its inhabitants.

In the prehistoric era, humanity was highly connected with nature, depending on it for food and resources. This connection highlights the human need for a substantial presence of natural environments. Green spaces serve not only as aesthetic elements but also as providers of essential ecosystem services.

Ecosystem services of Urban Green Spaces

As Robert Costanza et al., (1997, 2014) pointed out, "Ecosystem services are the ecological characteristics, functions, or processes that directly or indirectly contribute to sustainable human wellbeing". The Millennium Ecosystem Assessment (Millennium Ecosystem Assessment (Program), 2005) contains a classification of ecosystem services based on the functional approach of ecosystem assessment:

1) direct resource provision services provision of natural resources to produce services and goods, like food and fiber, fuel, genetic resources, natural medicines, decorative resources and others.

2) regulation services - ecosystem/ecological services related to the provision of various types of regulating functions by nature: assimilation of pollution and waste, regulation of climate and water regime, ozone layer, etc.

3) cultural services are a kind of "spiritual" environmental services, for example, spiritual, religious and aesthetic values, inspiration, knowledge systems and education, recreation and ecotourism, etc.

4) the service of maintaining the life of ecosystems - to a certain extent, it is a derivative of the first three functions, but it can also be distinguished separately. They differ from provisioning, regulatory and cultural services in that their impact on people is indirect or over a very long period of time, whereas changes in other categories of services have an immediate and short-term impact on people. For example, people do not directly benefit from soil-building services, although these changes will affect them indirectly by affecting the provisioning service of food production.

UGS offers a wide range of valuable goods to ecosystems and people, such as provision, regulation, and cultural services. Figure 4 illustrates how changes in biodiversity are expected to impact four different types of ecosystem services: regulating, cultural information, cultural recreation, and provisioning. With increasing urbanization, there is a visible descending trend in the provision ecosystem services of biodiversity.

Biodiversity includes the diversity of all living organisms, their habitats, and the ecological processes that support them. UGS, like city parks, plazas, gardens, and other natural areas found within cities or urban environments, can provide habitats for various plant, animal, and microbial species. These spaces can support a diverse fauna and flora, improving the area's biodiversity rates. Understanding and valuing the ecosystem services urban green spaces provide is essential for informed urban planning and design. Understanding UGS's primary ecosystem services is crucial. Below, the ecosystem services of urban green spaces will be more comprehensively described.
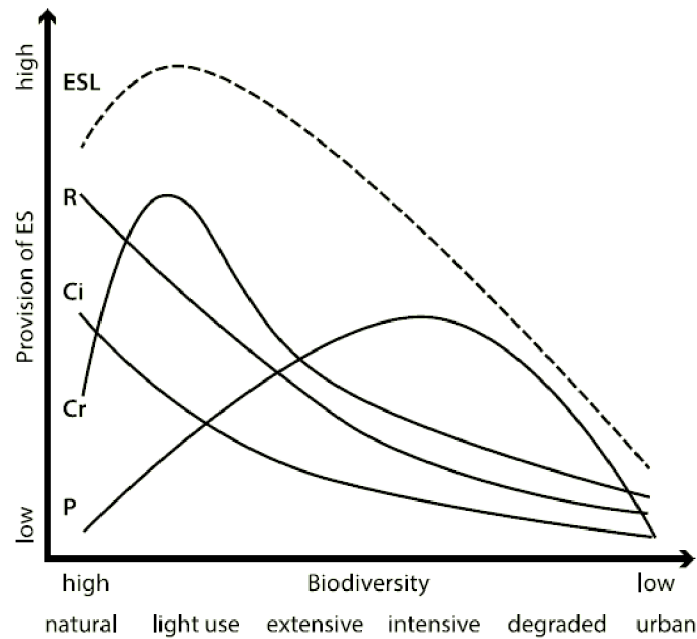
Figure 4. European Commission. (2015). *Sum of all the ecosystem services.* [Graph]. In-depth
report Ecosystem services and Biodiversity. https://shorturl.at/acdAL

Provision services

The provision services offered by UGS provide benefits to humans, such as food, fresh water, biofuel, and medicinal herbs (Millennium Ecosystem Assessment (Program), 2005). These spaces also support an exuberance of flowering plants, which attract a wide variety of insects and pollinators (Hicks et al., 2016). This increased amount of insects contributes to the overall health and productivity of the ecosystem, benefiting not only birds but also humans, who, for instance, enjoy honey produced by bees (Paudel & States, 2023). Another benefit of UGS, in terms of provision functions, is the grass biomass, which could be used as forage for livestock, compost, or as a source of bioenergy (Sobol et al., 2021).

However, the rapid urbanization occurring in many areas leads to an increase in paved surfaces and soil compaction. Consequently, soil erosion and sedimentation become more predominant, and rainwater runoff becomes contaminated. The limited presence of UGS makes these issues even worse, as their absence decreases the ability to effectively capture and filter pollutants and nutrients. Therefore, the invitation of more urban green spaces can recharge the freshwater supply by helping to infiltrate rainwater runoff and mitigate contamination (Paudel & States, 2023).

Regulating services

The regulating services offered by UGS provide more indirect benefits to humans, such as urban climate regulation, nature conservation, air quality improvement, noise pollution reduction, and wildlife habitats.

There is a growing interest in how the UGS influences the thermal conditions within cities. Urbanization, the increasing number of residents, and growing amounts of grey spaces such as buildings and paved surfaces negatively influence the general urban microclimate and global-scale climate (Grimmond, 2007). These construction materials, such as asphalt, concrete, and steel, and

mainly their dark colors, absorb heat from the surroundings and give it back to the environment (Matthews, 2012). This phenomenon was named the Urban Heat Islands effect and explained by Oke (1973) as the increased temperatures in cities compared to those around the countryside. Urban Heat Islands' effect creates thermal discomfort and negatively impacts the residents' well-being and health. At the same time, the increased temperatures within cities demand more energy to make them cooler (Alavipanah et al., 2015).

Urban green areas help mitigate the impacts of the Urban Heat Islands effect through the rising humidity, providing shade, cooling air and surface temperature, and increasing the amount of precipitation by evapotranspiration of vegetation (Paudel & States, 2023). An analysis of various studies on urban temperature variations indicates that, on average, areas with green spaces are approximately 1 degree Celsius cooler than those without greenery (Bowler et al., 2010). UGS also contributes to energy saving by minimizing the energy usage of buildings, which influences the decrease of CO2-emission because of less demand for cooling services for industries (Zhang et al., 2014).
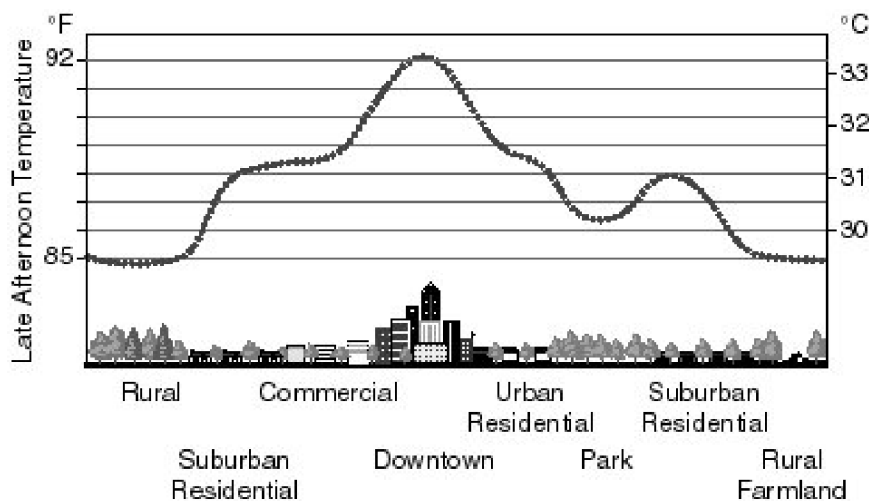
Figure 5. Onete, M. (2008). *Uran Heat-Island profile*. [Sketch]. ResearchGate. https://shorturl.at/afpUV

UGSs, as a multifunctional environment, function as a habitat for various species and contribute to soil and water quality, creating a more resilient ecosystem (Garzon Lopez & Savickytė, 2023). Urban green spaces such as city parks, gardens, green corridors, community woodlands, and others create habitats for different species, which support diverse plant and animal life within urban areas.

Still, the rapid development process of urban areas represents a risk to species diversity, wildlife composition, and ecosystems' overall functioning within urban environments (Garzon Lopez & Savickytė, 2023). However, urban areas could help to assist biodiversity conservation by using sustainable practices of maintaining the urban green spaces, special planning, and conservation methods (Aronson et al., 2014). An example of sustainable practices is the limitation of collecting leaves in specific green spaces, as this can increase species richness. This is linked to the crucial role of leaf litter as a vital resource for birds and invertebrates.

Leaf litter also plays a significant role in the creation and accumulation of soil organic matter, aiding in the regulation of soil processes, structure, and erosion. Urban soils perform crucial

environment-forming functions, altering the chemical composition of precipitation and groundwater. They serve as effective absorption barriers for vehicle emissions, factories, and others and represent one of the largest organic carbon pools within the urban environment (Churkina, 2016). Thus, urban green areas reduce soil erosion and improve soil quality, regulating water infiltration and flooding processes.

The influence of vegetation on the city's ecology is highly significant. Plant organs keep various pollutants, including gases and aerosols, radionuclides, and toxic substances, from the atmosphere. In cities with numerous non-green areas, dust in the air intensifies, leading to negative changes in its chemical composition. This overall environmental situation can have adverse effects on human health. For instance, Liang et al. (2020) pointed out the strong correlation between urban air pollution and an increased vulnerability to SARS-CoV-2 infection.

Paoletti et al. (2011) highlight the significance of green spaces in removing air pollutants. However, they point out that the effectiveness of decreasing pollutants varies depending on spatial factors. These factors include tree cover density, duration of the in-leaf season pollution amount, precipitation levels, and other meteorological elements influencing tree transpiration (Paoletti et al., 2011).

Urban green areas also contribute to decreasing noise pollution within cities. WHO (2011) points out different sources of environmental noise, such as roads, railways, air traffic, site construction, recreational activities, and others. Noise pollution can result in various detrimental impacts, including physical harm such as hearing loss, physiological effects like sleep disturbance, psychological consequences leading to elevated stress levels, and decreases in work performance (WHO, 2011).

The effectiveness of vegetation on the reduced level of noise was proved by different research (Huddart et al., 1990; Rakhshandehroo et al., 2017). Plants have various mechanisms to impact the noise levels within cities positively. First, plants can adsorb sounds and help in reducing overall noise levels. Then, vegetation acts as a barrier to break up sound waves, preventing them from traveling long distances and reducing noise pollution in adjacent areas. Also, sounds of vegetation, as well as sounds of birds and water within urban green areas, can introduce natural sounds to the city fabric. The natural sound helps mask or invite other noise sources, making the acoustic environment more pleasant and less intrusive.

Cultural services

UGSs, in terms of cultural ecosystem services, provide nonmaterial benefits and contribute to a city's well-being, aesthetics, and cultural richness. The links from ecosystem services to well-being are diverse, complex, and changeable, as seen in Figure 6. Green areas within cities offer many opportunities for recreational experiences for residents with diverse backgrounds, taking into account their abilities, needs, preferences, and time limits (Dahmann et al., 2012). These spaces increase the quality of life and invite people for active and passive recreation. Active leisure and recreation involve people in physical activities like walking, sports, and active games; however, passive activities are calmer and relaxing, such as sunbathing, picnicking, or simply spending time with friends and family.
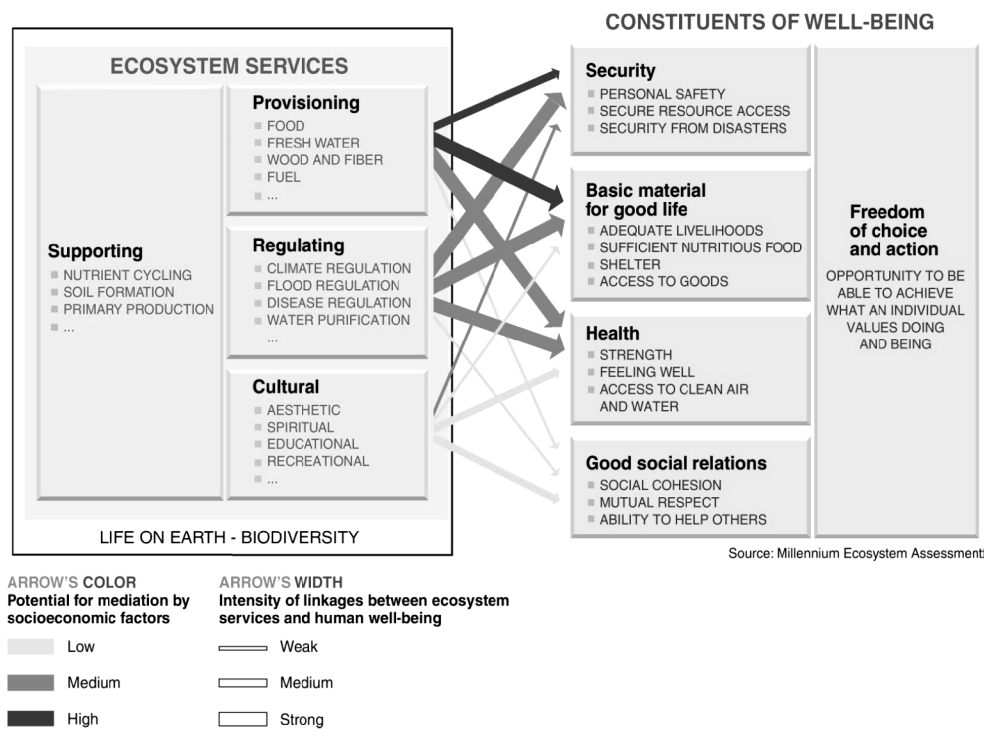
Figure 6. World Health Organisation. (2005). *Ecosystem services and well-being.* [Graph]. Millennium Ecosystem Assessment. https://shorturl.at/axHMY

Parks, gardens, green corridors, and other vegetation also create the aesthetic appearance of the cityscape. It has both social and economic values. Regarding social values, UGS can provide inspiration for individuals and increase creativity and artistic expression via connection with nature. From the economic point of view, the benefits of UGS relate to the proximity of residential areas to the green areas. It's proved that residential areas, surrounded by green environments, are more attractive to people and increase the value of houses (Luttik, 2000). For instance, Jim & Chen (2010) highlight that the presence of green spaces and the proximity to water bodies have significantly increased housing prices in China, contributing 7.1% and 13.2%, respectively.

The presence of green spaces positively impacts children's physical movement abilities and participation in outdoor activities. This enhances their understanding and awareness of environmental issues. Consequently, involvement in outdoor activities within green spaces offers leisure and opportunities for learning, thereby contributing to personal growth and development (Rakhshandehroo et al., 2017).

UGS can be considered as a form of heritage within a city. These green spaces, including parks, gardens, and urban forests, often hold historical, cultural, and ecological significance. For example, memorial parks are part of cultural heritage. Memorials represent the collective memory of social groups, embodying the significance of an event, person, or circumstance that holds collective importance (Dimitropoulos, n.d.). They serve as a connection between the past, present, and future, making past events alive in people's memories through the memorial's physical representation (Attwa et al., 2022). The national September 11 memorial (New York) is dedicated to the victims of the attacks at the World Trade Center and was designed by Michael Arad and Peter Walker. The memorial is created with two large empty spaces where the World Trade Center towers once stood to represent a feeling of absence and shock. These spaces are shaped by powerful waterfalls and are surrounded by an area filled with oak trees. The memorial serves as a

place for remembering, and at the same time, it is a space that people use in their daily lives (Attwa et al., 2022).

Relationship between Green Spaces and Health

Urbanization and globalization often bring about an unhealthy lifestyle and stress due to long distances, traffic, and fast food. These factors contribute to the rise in chronic diseases such as diabetes, respiratory diseases, and even cancer. The living environment directly impacts residents' health-related lifestyles. The World Health Organization (2022) recommends avoiding bad habits, increasing physical activity, and focusing on consuming healthy food; these measures, in general, will improve people's health.

The World Health Organization formulated the definition of health in 1948: "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (Van Den Berg et al., 2018a). The definition opened a new approach to estimating health via diseases and health and well-being. The research work was done to prove the positive effect of urban green areas on people's well-being and health.

Van Den Berg (2018) describes the connection between green spaces and health via four mechanisms: improvement of air quality, an increase in physical activity, stimulation of social activity, and stress reduction (see Figure 7). The correlation between UGS and air quality was detailed described in part "Ecosystem services of Urban Green Spaces." Now, the focus will be on the three mechanisms – physical activity, social cohesion, and stress reduction.
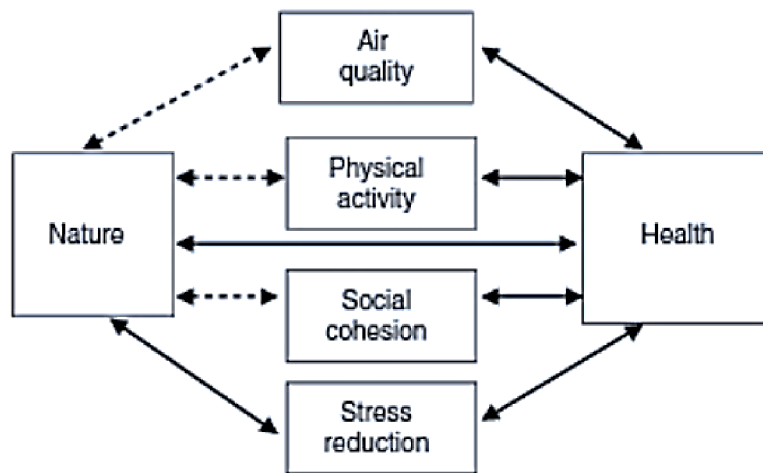
Figure 7. Van Den Berg, A. E., Joye, Y., & De Vries, S. (2018). *Relationships among nature, health, and underlying mechanisms*. [Scheme]. ResearchGate. https://shorturl.at/afjuM

Physical activity

The trend of decreasing people's physical activity within cities is becoming common in different countries, which has a serious consequence on the overall well-being of the global population (WHO, 2012). Public green spaces serve various purposes, such as providing opportunities for recreation and physical activity. Moreover, certain parks provide outdoor exercise programs, typically at no cost. The strong connection between physical activity and the presence of green spaces has been primarily documented in studies involving children and the elderly. (Van Den Berg et al., 2018).

Another important feature of green spaces is the ability to improve emotions during physical activity. Bowler (2010, as cited in (Van Den Berg et al., 2018b) concluded that people who made any physical activity such as running, cycling, or walking in green areas have more positive emotions and increased well-being compared with those who did exercises outside nature like indoor activities or just built area. It also benefits children in terms of creativity and more explorative ways, improving their emotional and physical levels and cognitive development (Wilson, as cited in (Van Den Berg et al., 2018).

Urban green spaces offer more than just a place for physical activities; they also enhance the immune system by contributing to optimized and balanced microbial exposure. Spending time in green spaces can promote the regulation of the immune system, reducing overall inflammation for various reasons (Rook, 2013). Studies have indicated that children predisposed to various allergies were less likely to develop allergic sensitization through contact with nature (Lynch et al., 2014, cited in WHO, 2016).

WHO (2016) pointed out a review of 60 studies across the United States, Canada, Australia, New Zealand, and Europe, which explored the link between green spaces and obesity. Most (68%) of these studies indicated that green spaces are connected to lower obesity rates. However, age and socioeconomic status could influence the strength of this relationship. Another study conducted by Danielle H. B. et al. (2014) found that a high amount of green areas within neighborhoods significantly influences the reduction of type 2 diabetes levels, relating it to the improvement in physical activity.

Another way to utilize green spaces for physical activity is by producing food. This promotes physical exercise, enhances social well-being, and encourages a healthier diet in daily life, ultimately contributing to the reduction of obesity. In a study conducted by Castro et al. (2013), they explored the connection between growing food in community gardens, incorporating various educational nutrition programs, and reducing childhood obesity. The research confirmed that increased accessibility to fruits and vegetables within community gardens led to higher consumption of these foods. By the end of the 7-week program, 17% of overweight children had improved their Body Mass Index.

Social activity

Social interaction positively impacts general well-being and health, whereas social isolation increases the risk of illnesses and diseases (WHO, 2016). Green spaces offer physical settings that promote social interaction, fostering a sense of community (Kim & Kaplan, 2004). Numerous studies have confirmed the significance of green spaces in cities for enhancing social interactions in formal and informal settings.

Green areas also provide shaded areas, encouraging people to spend more time outdoors during the summer and enhancing social interactions among community members (Coley et al., 1997). A study in the Netherlands by De Vries et al. (2013) discovered a link between the amount and, particularly, the quality of greenery along streets and people's perception of social activity in the neighborhood. The study defined social cohesion as a feeling of community, emphasizing trust, shared norms, positive relationships, and acceptance and belonging.

The presence of UGSs in cities generally aims to create a sense of safety and provide a positive environment for people to gather. However, poorly maintained green spaces can have the opposite effect, contributing to feelings of insecurity within the city. Factors such as lack of lighting, accumulation of garbage, vandalism, and overgrown vegetation can create conditions

conducive to fear and insecurity. This is because such conditions may limit visibility, create hiding spots, and make the area less inviting for social interaction. The study by Hajzeri (2021) supports the idea that maintenance and effective management of green spaces are crucial practices in encouraging positive social interactions and fostering a sense of security. Proper upkeep of these spaces can contribute to a more welcoming environment, promoting community engagement and reducing the perception of risk or insecurity associated with poorly maintained areas.

Stress reduction

The urban living environment provides a rising level of stress and mental ill-health due to various factors such as environmental issues, social problems like inequality and unfavorable community relationships, poverty, or violence. Health and mental health are basic human rights. Based on the definition by WHO (2005), mental health is a condition of mental well-being that helps people control their stress levels, live a full life with the ability to study and work well and contribute to community life. Mental health is essential to people's health, which helps create relationships, make informed decisions, and support a comfortable life.

Mental well-being extends beyond the absence of mental disorders (WHO, 2005). Each person experiences mental health differently and to a different degree, possibly resulting in diverse social and clinical consequences. Numerous evidence indicates that being in a green environment can enhance an individual's performance and alleviate stress (Kuo, 2001). Various research supports the idea that engaging with nature is a therapeutic practice. When experiencing negative emotions, many individuals opt to spend time in natural or semi-natural settings to improve their well-being (Marcus, 2000).

Ulrich's (1999) research demonstrated that exposure to various natural environments significantly positively impacts emotional, stress-related behavior and psychological well-being. The study proved that individuals with high stress levels experienced substantial benefits from looking at greenery. Additionally, patients reported that green landscapes contributed to a reduction in pain levels, potentially leading to a decrease in the need for medications. This supports the statement that well-designed gardens, with a focus on healing aspects within healthcare institutions, contribute to the reduction of depression and stress and the enhancement of overall health conditions.

Numerous theories offer insights into the connection between individuals, their environment, and health, which help comprehend the outcomes related to health. These theories may offer a more comprehensive explanation of people's motivations and behavior and create a better environment to decrease stress and improve health. Attention Restoration Theory, Stress Reduction Theory, and Therapeutic Landscapes will be thoroughly investigated (Irvine et al., 2013).

Attention Restoration Theory stands out as one of the dominant theories in environmental psychology. According to Kaplan and Kaplan & Kaplan (1989), the theory asserts that the natural environment can restore and enhance directed attention. Directed attention is categorized into two types: deliberate and systematic focus for specific tasks and voluntary attention, characterized by a gentle, soft, and effortless focus on situations in general. The fundamental concept of Attention Restoration Theory is that prolonged directed attention, such as focusing on a task, leads to fatigue, resulting in errors, difficulty maintaining focus, or impatience. The theory suggests that attention can be restored by engaging in voluntary activities (Kaplan & Kaplan, 1989). Natural environments play a crucial role in supporting recovery from mental exhaustion through gentle

stimuli that effortlessly capture attention. Restoration and preference are often linked: we like the places we feel good in, and we feel good in the places that we like.

Kaplan (1995) identifies four components - being away, fascination, extent, and compatibility - that a restorative environment should possess.

Being away feature emphasizes that restorative potential is not exclusive to remote natural settings like forests or mountains but also includes nearby green areas such as parks, gardens, or street trees.

The fascination component emphasizes the appeal of rich, charming natural elements like sunsets, sunrises, and the gentle leaves swaying in the breeze. These elements subconsciously capture attention, making the environment more comfortable, encouraging people to enjoy their surroundings, and prompting contemplation.

The extent component is associated with the scale and location of the natural area. The urbanization process influences the expansion of the built environment, leading to a decrease in green spaces. Various design techniques, such as combining open and semi-open spaces with trails and paths to visually enhance the area, could be employed to address this issue. Another design technique is miniaturization, which is quite common in Japanese gardens.

Compatibility highlights the perception of natural environments as harmonious settings, suggesting a distinct affinity between natural surroundings and human preference. Compatibility refers to the link between the landscape and its perceiver. People should want to experience and appreciate the environment.

Stress reduction theory, proposed by Ulrich (1981), asserts that looking at natural objects such as greenery or water positively decreases the effects of a stressful situation. This process is often hidden in densely built urban environments. The theory is based on various research in different fields, mainly in hospitals. Ulrich (1984) studied how views of natural settings influence health characteristics. The research was conducted at a suburban Pennsylvania hospital between 1972 and 1981, with patients recovering from gallbladder surgery. Two types of rooms were investigated: rooms with windows overlooking a natural setting and views of a brick wall. Patients in rooms with a natural view received fewer negative evaluative comments in nursing notes than those in rooms facing the brick wall. There was also a noticeable reduction in heart rate, blood pressure, cortisol levels, and other clinical indicators. Additionally, the effect extended to people's moods, feelings of comfort, safety, and relaxation (Ulrich, 1984).

Ulrich (1991) also recommended criteria for healthcare gardens that force stress reduction via satisfaction of the following steps (see Figure 8):

1. Sense of control and access to privacy
2. Social support
3. Physical movement and exercise
4. Access to nature and other positive distractions

Therapeutic landscapes are directed at environmental, societal, and individual factors or elements that improve the health and well-being of people in different environments or settings.

Joane Westpha (2000) classified them into five different types: Healing gardens, Enabling gardens, Mediative gardens, Rehabilitative gardens, and Restorative gardens.

Healing gardens aim to improve people's overall well-being by addressing various aspects of their lives, such as psychological, physical, and spiritual. These gardens improve one's mood and help restore the body's functionality.

Enabling gardens focus on individuals' physical condition while also addressing their psychological needs. They are designed to encourage physical activity, improve physical health, and promote spiritual well-being through meaningful activities.

Mediative gardens are created for individuals or small groups to create a space where they can focus on their inner selves. Spending time in these gardens can enhance psychological and spiritual well-being.

Rehabilitative gardens play an important role in patients' recovery, helping them achieve their medical goals. These gardens primarily provide opportunities for physical activity, but they also offer psychological benefits.

Restorative gardens are designed to help individuals recover emotionally and psychologically after experiencing stressful events. These gardens provide a peaceful green space where people can rest.

Gesler (cited by Irvine et al., 2013) conducted a survey that proved the relation between the surrounding environment, social conditions, and how humans perceive therapeutic landscapes. This study demonstrated the close correlation between health, nature, and culture.

RESTORATIVE AND COPING RESOURCES
Provided by Gardens in Healthcare Facilities

MOVEMENT & EXERCISE	SOCIAL SUPPORT
Mild exertion Physical Reabilitation	Among patients, visitors, stuff
CONTROL (ACTUAL & PERCEIVED)	NATURAL DISTRACTIONS
Temporary Escape Access to Privacy	Plants, flowers, water Nature sounds Wildlife

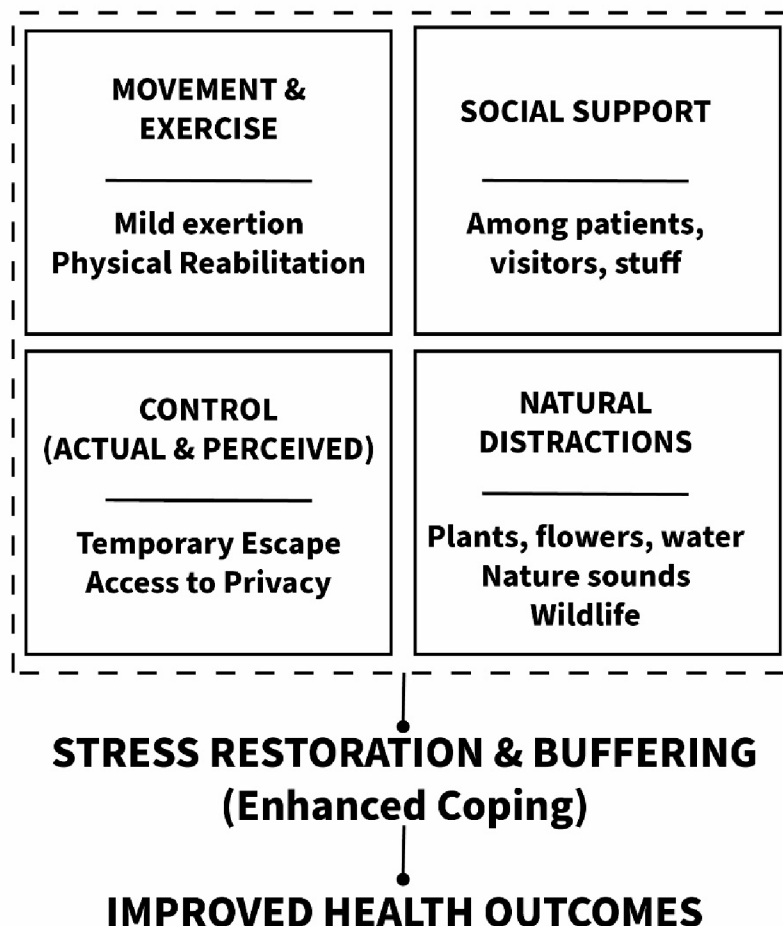## STRESS RESTORATION & BUFFERING (Enhanced Coping)

IMPROVED HEALTH OUTCOMES

Figure 8. Ulrich, R.S. (1999) and re-illustrated back by the author (2024). *Effects of gardens on health outcomes.* [Conceptual model]. Effect of Gardens on Health Outcomes: Theory and Research. https://illinois-online.org/krassa/hdes598/Readings/Effects%20of%20Gardens%20on%20Health%20Outcomes.pdf

Benefits of Urban Green Spaces within multicultural neighborhoods

With globalization, densification of urban spaces, and increasing migration rates, urban areas are becoming more multicultural, resulting in reduced interaction between residents and decreased social cohesion for various reasons (Rakhshandehroo et al., 2017). Urban green spaces positively improve social interactions as a place where people can gather and better know each other, which creates social bonds among neighborhood residents (Völker et al., 2007).

Urban green areas are places where people from around the world with diverse cultural backgrounds can spend time together and engage in a different communication process, thereby improving social cohesion. They are also important spots where people can mitigate stress levels after everyday experiences via communication and integration with various people. Different factors influence the level of multicultural interactions, such as park design, location, availability, and the perception of the UGA by residents with diverse ethnic backgrounds (Peters et al., 2010).

While multiculturalism creates enrichment and opportunities for neighborhoods, cities, and the general population, it can also bring another issue. The study by Wo (2022) that diverse populations tend to have higher crime rates over time compared to more homogeneous populations. The association between ethnic heterogeneity and higher crime rates is a complex issue with various underlying factors.

Various research studies have concluded a positive link between vegetation and fear of crime and crime rates in various situations (Kuo & Sullivan, 2001). Venter et al. (2022) proved that increasing the amount of green space by 1% leads to a 1.2% decrease in violent crime and a 1.3% decrease in property crime, according to a range of 0.7% to 1.7% for violent crime and 0.8% to 1.8% for property crime.

However, recent studies in residential areas suggest the opposite may be true. People living in areas with more greenery tend to report lower levels of fear, less incivility, and less aggressive and violent behavior (Kuo & Sullivan, 2001). Additionally, Kaplan (1987) suggested that stress could potentially lead to more severe and violent crimes. Evidence shows that green spaces can help reduce stress levels and decrease the likelihood of crime committed by stressed individuals (Donovan & Prestemon, 2012). Providing evidence that access to nature can reduce violence in urban environments allows city governments and communities to promote interventions that incorporate green spaces (Shepley et al., 2019).

According to Kazmierczak & James (2007), when issues like unemployment, low income, poor health, and high crime rates occur together, they can lead to social exclusion and disrupt local communities. This ultimately decreases the overall quality of life for both individuals and groups. These issues are typically concentrated in socially marginalized areas. Researchers suggest that community cohesion can be fostered by creating and improving green spaces in these excluded areas, and individuals can be more included in society. This can be achieved through four means:

Providing free and accessible spaces for everyone: Urban green spaces should be open to all community members, regardless of their social or economic status.

2. Creating opportunities for social interaction: Green spaces can act as a meeting point for individuals, encouraging social connections and community engagement.

3. Reducing stress and mental fatigue: Spending time in green spaces has been shown to alleviate stress and mental fatigue, reducing aggression and conflict within communities.

4. Offering opportunities for voluntary work: Green spaces can allow residents to contribute to their community through voluntary work, further promoting community cohesion and inclusiveness.

The authors propose that implementing these ideas and enhancing green spaces in socially excluded areas can improve the resident's lives and force the formation of inclusive and cohesive communities. This approach highlights the importance of utilizing green spaces for social integration and community development.

3.3. PARTICIPATORY DESIGN PROCESSES

Encouraging people's integration into design and planning processes for urban development is essential for achieving democratic justice with the aims outlined in the UN SDGs. In the UN's New Urban Agenda and the 2030 Agenda for Sustainable Development, cities are encouraged to participate and promote civic engagement. This corresponds with SDG 11, which highlights the bond between sustainable urbanization and the development of built areas (United Nations, 2016). By advocating for inclusivity, sustainability, and participation, these objectives provide a pathway to involve individuals in proactively addressing issues affecting the present population and future generations. The European Parliament also supports public participation in decision-making for urban design, which increases the resilience of the cities (UN ISDR, 2005).

Definition and Importance of Participatory Design

In landscape architecture, there is a growing trend towards integrative research projects that embrace interdisciplinary and transdisciplinary approaches, as outlined by G. Tress et al. (2005), see figure 9.

One academic discipline limits the monodisciplinary approach, excluding collaboration with others and focusing only on developing new knowledge within that discipline.

On the other hand, the multidisciplinary approach incorporates various disciplines into the research process, uniting them under a common thematic umbrella. This encourages loose cooperation for the exchange of knowledge and the advancement of disciplinary theories.

In the interdisciplinary approach, researchers transcend disciplinary boundaries while sharing common goals. This integration of disciplines fosters the development of comprehensive knowledge and theories. The transdisciplinary approach takes it a step further by crossing disciplinary and academic boundaries and involving non-academic participants. This inclusion forces the creation of integrative knowledge and theories that bridge the gap between science and society.

A cross-disciplinary approach encompasses multi-, inter-, and transdisciplinary approaches, offering a more holistic perspective on complex and dynamic issues. This approach provides greater flexibility in research, generating new insights and information by fostering knowledge production across various fields. Additionally, interdisciplinary and transdisciplinary research in landscape architecture is expected to address societal demands and contribute to practical problem-solving. (B. Tress & Tress, 2001) emphasized that researchers engaging in integrative projects find the experience positive, particularly in discussions, networking, teamwork, and acquiring new insights and skills.
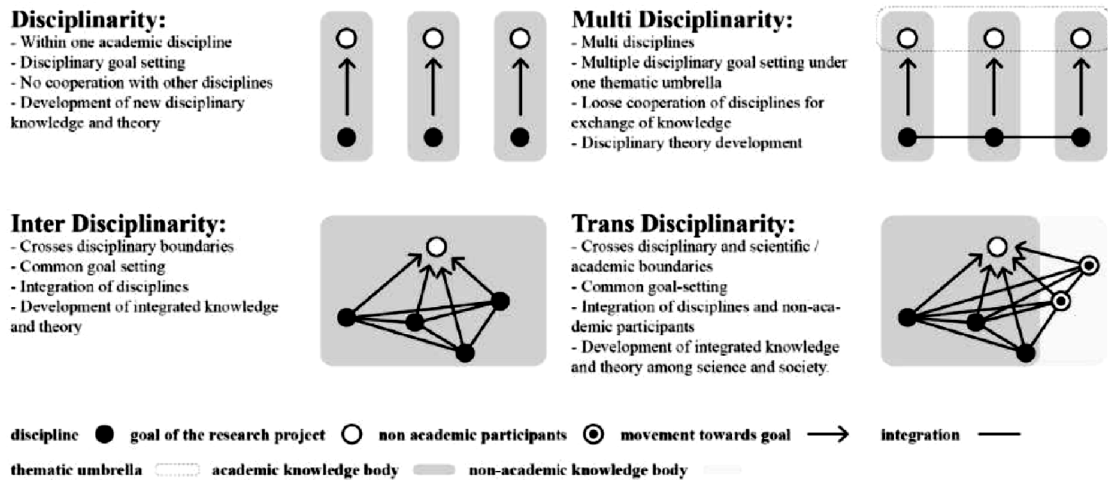
Disciplinarity:
- Within one academic discipline
- Disciplinary goal setting
- No cooperation with other disciplines
- Development of new disciplinary knowledge and theory

Multi Disciplinarity:
- Multi disciplines
- Multiple disciplinary goal setting under one thematic umbrella
- Loose cooperation of disciplines for exchange of knowledge
- Disciplinary theory development

Inter Disciplinarity:
- Crosses disciplinary boundaries
- Common goal setting
- Integration of disciplines
- Development of integrated knowledge and theory

Trans Disciplinarity:
- Crosses disciplinary and scientific / academic boundaries
- Common goal-setting
- Integration of disciplines and non-academic participants
- Development of integrated knowledge and theory among science and society.

discipline ●   goal of the research project ○   non academic participants ◉   movement towards goal ⟶   integration ——

thematic umbrella ⌐⌐⌐   academic knowledge body ▬   non-academic knowledge body ▬

Figure 9. Tress et al., (2005). Characteristics of the Concept of Transdisciplinarity. [Diagram]. Frontis, Vol 12. shorturl.at/jqzE4

While different cross-disciplinary approaches, such as multi, inter, and transdisciplinary methods, exist for designing spaces (G. Tress et al., 2005), the transdisciplinary approach uniquely transcends disciplinary boundaries. Unlike other approaches, transdisciplinary methods involve academic or professional participants and integrate non-academic individuals into the design process. This is often referred to as 'mutual learning' (Simonsen & Robertson, 2012) or 'co-designing' (Sanders & Stappers, 2008), driven by ethical motivations that value input from diverse end users.

Creating landscape areas in urban settings demands a transdisciplinary process beyond designers involving municipalities, residents, and landowners. This approach establishes a participatory model, responding to the varied needs of users with diverse backgrounds. In essence, a transdisciplinary approach ensures a comprehensive and inclusive design process that considers the perspectives and input of all stakeholders in the urban landscape.

Disposed within the human-centered design framework, participatory design processes depend on iterative methods that incorporate user input and observations during the ideation or prototyping phases. By involving various stakeholders, these processes facilitate the creation of solutions tailored to specific needs. Considering the perspectives of various stakeholders, including citizens, contributes to the development of inclusive platforms for sharing social responsibility, thereby distributing decision-making ownership and enabling meaningful participation (United Nations, 2016).

Participatory design in landscape architecture is an inclusive and collaborative approach that involves stakeholders, including the community, in the design process. This method recognizes the importance of engaging end-users and incorporating their perspectives, needs, and preferences into the development of outdoor spaces. According Simonsen and Robertson (2012) participatory design is "a process of investigating, understanding, reflecting upon, establishing, developing, and supporting mutual learning between multiple participants in collective 'reflection-in-action'. The participants typically undertake the two principle roles of users and designers where the designers strive to learn the realities of the users' situation while the users strive to articulate their desired aims and learn appropriate technological means to obtain them" (Simonsen & Robertson, 2012).

Van Der Velden & Mörtberg (2014) describe the Participatory Design tradition as established in Scandinavia in the early 1970s. It was influenced by and developed with a range of

projects focusing on democratizing working life. These projects were conducted by the trade unions or jointly by the trade unions and working life researchers. The Norwegian Iron and Metal Workers Union initiated one of the first Participatory Design projects in cooperation with researchers from the Norwegian Computing Centre from 1970 to 1973. The objective was to involve the workers in designing a computer-based planning and control system for their workplace. A plan was designed based on a participative approach and the inclusion of workers' knowledge, with several activities for the unions. These activities include working group sessions aimed at discussion and solutions through actionable programs, evaluations of current information systems, and suggestions for alterations.

According to Jacobs (1961), cities can truly satisfy the diverse needs of their inhabitants only when the entire community collectively shapes them. Urban spaces evolve through many decisions and remain constantly changing, influenced by factors such as time, environment, and evolving cultures (Batty, 2007). Using technology and involving various groups in decision-making is suggested to enhance efficiency through self-regulation, enabling informed and incremental decision-making.

Elevating the degree of public involvement is crucial in landscape architecture. Arnstein (1969) emphasizes a significant distinction between mere nominal rituals of public participation and engaging in a potent process that can yield new outcomes. The author outlines a spectrum of 8 levels of participation and "nonparticipation," representing varying degrees of citizen power (see Figure 10).
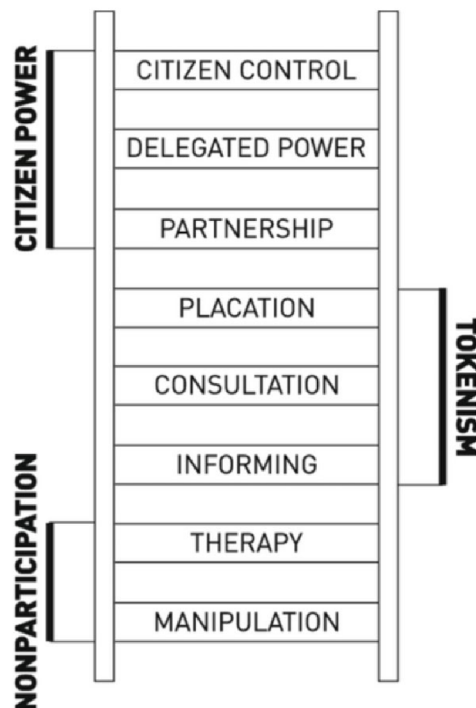

Figure 10. Arnstein, S.R. (1969). *Eight Rungs on a Ladder of Citizen Participation*. [Scheme]. Journal of the American Institute of Planners, Vol. 35. https://www.tandfonline.com/doi/abs/10.1080/01944366908977225

Manipulation and Therapy fall within the "Nonparticipation" level at the lower steps of the ladder, characterized by actions that substitute real participation. In this scenario, the objective is not authentic engagement but rather providing an opportunity for those in power to "educate"

participants. Moving up the ladder, Informing, Consultation, and Placation fall under the "Tokenism" level, offering participants a voice alongside the opportunity to be heard. However, there is no guarantee that powerful leaders will heed participants' perspectives at this stage. While participants can provide advice, ultimate decision-making authority rests with those in power.

The head of the ladder is "Citizen Power," which consists of three components. Firstly, Partnership involves citizens engaging in dialogue and negotiation with powerful leaders, including the possibility of making compromises when necessary. The final two steps, Delegated Power and Citizen Control represent the highest levels where participants gain the ability to make decisions or even have managerial power. In landscape architecture, these levels of citizen participation are crucial for fostering meaningful collaboration and ensuring that the voices of the community are genuinely heard and considered in the decision-making process.

Methods of Community Engagement

Community engagement is essential to the design process, ensuring that the community's perspectives, needs, and preferences are considered. Various methods can be employed to facilitate effective community engagement in the design process.

Van der Velden and Mörtberg (2015) noted that participatory processes in landscape architecture encompass diverse methods, ranging from card games and mapping techniques to workshops, charades, and the utilization of prototypes and mockups. Each of these methods serves distinct purposes and plays a unique role within a project's timeline.

PURPOSE	METHODS
Inspire, explore, express values and emotions	Card methods
Map, express and explore local knowledge	Mapping methods Use of storytelling
Plan and enact possible futures	Workshops, charrettes Use of scenarios
Generate, evaluate, and concretize design ideas	Participatory prototyping Use of mockups

Figure 11. Illustrated by the author. (2024). *Participatory Design Methods described by Van der Velden and Mörtberg* (2015). [Table].

In landscape architecture, participatory prototyping is a valuable tool for crystallizing and refining ideas. This approach involves creating tangible prototypes or mockups that allow stakeholders and community members to physically engage with and provide feedback on design concepts. By employing participatory prototyping, landscape architects aim to expedite the decision-making process. This method not only aids in the visualization of proposed ideas but also facilitates meaningful input from various stakeholders, ultimately contributing to a more collaborative and well-informed design outcome.

Role of Community Input in Design Decisions

Community input plays a pivotal role in design decisions, particularly in the context of urban resilience. Examining how a place-based approach contributes to public space initiatives involves studying participatory processes. These processes aid in developing activities that consider community awareness and encompass the interconnected aspects of the physical, environmental, and social dimensions. Research in this area also demonstrates that participatory approaches play a crucial role in mitigating inequality and addressing underrepresentation, particularly in initiatives aimed at enhancing the resilience of urban spaces.

It becomes evident that placemaking practices emphasize prioritizing people and their experiences as the primary catalysts for creating vibrant and enjoyable places. In essence, these projects underscore the significance of human-centric design in shaping livable and inclusive environments.

Community engagement in the design process is essential for creating sustainable and resilient urban environments. Urban resilience addresses the challenges of the three major global trends: climate change, people migration, and urbanization. Norris et al. (2008) defines resilience as "a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance." Urban resilience involves a city's capabilities to absorb, recover, and prepare for future challenges, driven by the combination of four key dimensions: environment, economy, public administration, and society (OECD, n.d.). Resilient cities can quickly adapt and transform in the presence of disruptions. These cities can effectively respond to adversity and demonstrate a capacity for recovery.
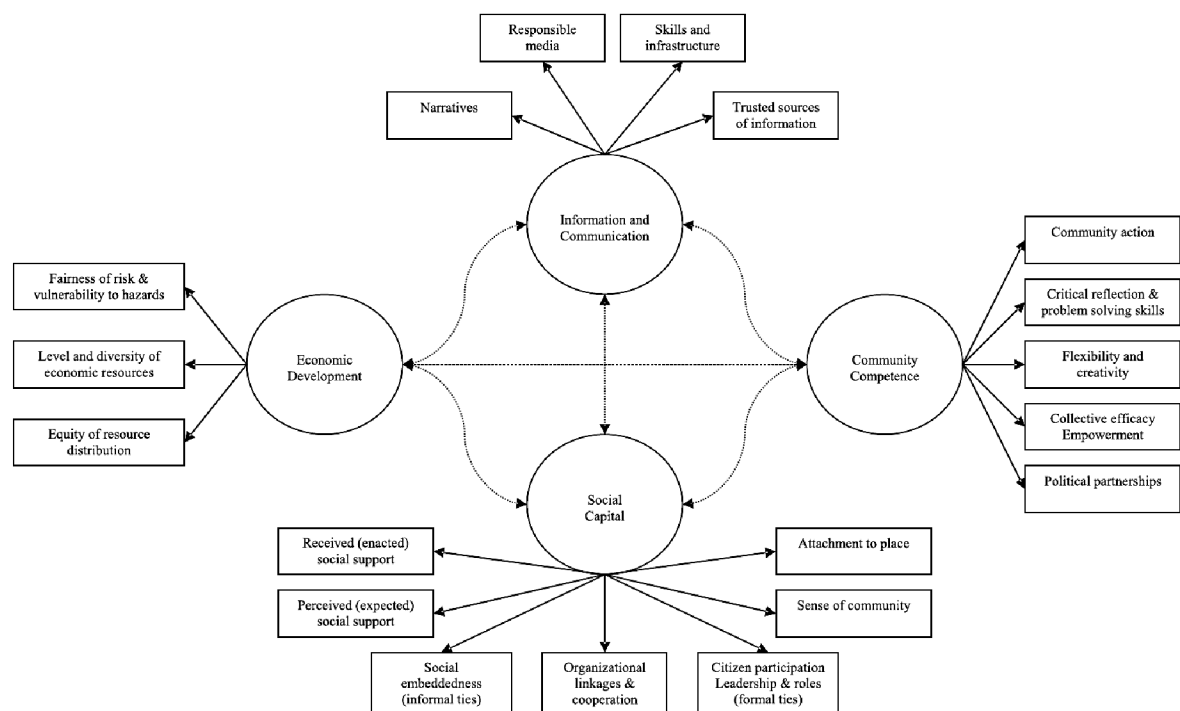

Figure 12. Norris, A. (2008). *Communities Impact on Urban Resilience*. [Diagram].
ResearchGate. shorturl.at/DFMX2

Norris et al. (2008) pointed out that in Economic Development, residents and communities play a significant role in shaping or providing input on how sustainable and resilient settlements

should take place in their communities through Information and Communication, Social Capital and Community Competence resources, see the figure 19. The process of people informing and integrating them into the decision-making process enhances the community's capabilities and elevate society's critical thinking and adaptability to the changes by fostering a social capital based on the collective strengths of individuals and their surroundings.

Since the mid-1960s, a focused effort has been to find solutions for improving the relationship between people and city public spaces. This initiative involves integrating individuals into urban problem-solving and planning processes. Influential figures like Jane, William, and Ian, pioneers of urban theory, played a key role in developing the concept of placemaking. The placemaking theory aims to enhance the connection between cities and their residents through a collaborative approach. Widely applied in urban planning and design, placemaking theory involves reimagining public spaces to meet community needs better and strengthen the bond between people and their surroundings.

The process of gaining a greater level of resident participation is extremely important when aiming for an overall improvement in the urban context. Cultural identity, defined by belonging to specific groups or cultures, is becoming increasingly influential in shaping individual and collective connections. It plays an important role in determining the inclusion or exclusion of individuals in various cultural spheres or environments. These cultural elements appear differently, influencing interactions among individuals and communities. This is particularly noticeable in the dynamics between host communities and migrants, considering language, attire, culinary practices, and cultural symbols. Neighborhood diversity might undermine residents' sense of belonging, making everyday routines and interactions more uncertain and unpredictable (Neal et al., 2013). As a non-local cannot emancipate enough in what makes the neighborhood liveable (Hoekstra & Dahlvik, 2018), a comprehensive participatory process that encourages residents to share their needs or participate in the design process became very valuable.

Eisenberg noted that citizens are familiar with the neighborhoods in their city. Thus, they can actively contribute to the planning process for urban development (Eisenberg, 2012). Awareness of issues and challenges in their living environment makes citizen participation a powerful tool in addressing and resolving various problems. The connections between people and urban areas depend on the characteristics of the place, both socially and physically. This calls for various approaches to urban greening, involving the participation of many people with different perspectives, such as landlords, tenants, and individuals of various ages, genders, and religions. People see public spaces differently and have diverse needs and ideas for these areas, contributing various viewpoints to the urban planning process.

By incorporating the community's knowledge, values, and priorities, designers can create solutions that not only withstand shocks and stresses but also promote the well-being and adaptability of the people within those urban spaces.

The social and spatial context surrounding each participation process varies, indicating that integrating people into the planning process requires an adaptive approach suited to the unique circumstances of each case. In non-homogeneous cultural environments, it remains uncertain who will participate and at what level they should be involved in the design process. Neglecting the distinctiveness of each location and solely adhering to standardized, pre-approved steps of participation may result in a misapplication of this term. From the perspective of a landscape architect, recognizing and adapting to the specific nuances of each context is essential to ensure meaningful and culturally sensitive engagement in the planning and design processes.

Challenges and Opportunities in Multicultural Engagement

Engaging with multicultural communities presents challenges and opportunities, reflecting the complexity of navigating diverse perspectives, backgrounds, and experiences.

Encouraging increased resident participation in multicultural neighborhoods is crucial for enhancing the overall quality of urban environments. Cultural identity, shaped by group affiliations and cultural backgrounds, significantly impacts individual and collective connections, influencing inclusion and exclusion in various cultural domains. This influence is evident in interactions within and between communities, especially in multicultural settings where factors like language, clothing, cuisine, and cultural symbols play a role.

Neighborhood diversity can sometimes challenge residents' sense of belonging, introducing uncertainty and unpredictability into daily routines and interactions, particularly in the dynamics between established communities and migrants. Non-local individuals may need help fully integrating into the neighborhood's livability, and they need more ability to fully engage in its cultural fabric (Hoekstra & Dahlvik, 2018). In response, a comprehensive participatory process becomes invaluable, encouraging local and non-local residents to share their needs and contribute to the design process actively. This approach aims to foster a sense of belonging and address the challenges of cultural diversity in urban neighborhoods.

Building on Arnstein's "Ladder of Participation" (1969), Sarah White (1996), in her article on the uses and abuses of participation, introduces a dynamic perspective on citizen engagement. White emphasizes the significance of participants' widespread interests and real engagement in the participatory process, critiquing the overly positive image of citizen participation without considering its dynamics and context dependency.

White raises concerns about the lack of awareness among project initiators regarding the dynamics involved in citizen participation. She underscores the need for special mechanisms in approaching and managing the participation of non-homogenous groups, stressing that each participation process is unique due to the varied social and physical contexts.

One key argument is that project initiators often overlook the uniqueness of each location, relying on standardized participation steps. White warns that neglecting the distinct circumstances of each site may lead to an abuse of the term "participation."
White's insights underscore the need for a nuanced and site-specific approach to citizen participation in design processes. Acknowledging the unique dynamics and context of each project location is crucial to avoid the potential misuse of participation and to ensure that engagement efforts genuinely empower diverse communities within the landscape architecture framework.

3.4. DESIGN AND RESEARCH

Cities are still growing rapidly. It is assumed that by 2030, three out of every five people will live in an urban area (UN, 2016). Although cities provide enormous economic, technical, and cultural opportunities, they also become places of social conflicts, segregation, and environmental and health problems - impacting the climate and liveliness of people and wildlife. The knowledge of urban designers plays an increasingly important role in solving these conflicts since they can respond to these challenges with urban environmental research, a cross-disciplinary outlook, and practical decision-making and problem-solving skills. This leads to the increasing role of objectivity during the urban design and landscape architectural design process. It is crucial to clarify the meanings and conceptual boundaries of "design" and "research." Ranulph Glanville

(1999) proposed a perspective on "research" as the process of conducting a thorough and comprehensive investigation into a specified question, leading to the acquisition of new knowledge. He also highlighted the differences between "design" as a noun and a verb. As a noun, "design" defines the final product characterized by specific shapes and features. However, according to Lenzholzer (2013), the verb "designing" refers to the process of production of "design," including the definition of the configuration and structure in terms of expanse and scale. As a result, "design research" means identifying design concepts that will lead to the main goal, such as answering a research question (Lenzholzer et al., 2016).

According to Christopher Frayling (1993), there are three categories of "design research"—research for art and design, research through art and design, and research into art and design. These categories help us better understand the role of research in the design process.

The Research for Art and Design approach aims to assist the design process, influencing both the design product and the design process. In fields such as landscape architecture and urban design, a transdisciplinary approach is used, integrating knowledge and theory among diverse disciplines, including science and society. As a result, Research for Art and Design generates a vast amount of information, creating a broad database of insights and experiences. This information can be applied to develop 'evidence-based' design products, as highlighted by Lenzholzer et al. (2016). The study "Fractal Geometry for Landscape Architecture: Review of Methodologies and Interpretations" by Agnès Patuano and Ata Tara (2020) demonstrates the concept of Research for Design. This research delves into exploring the connections between fractal principles and landscape architecture. The study lays the foundation for potential future applications in predicting design preferences by investigating these relationships. This work could prove valuable in creating more aesthetically pleasing designs based on a deeper understanding of fractal geometries and their impact on landscape architecture.

The Research through Art and Design approach employs designing during the research process. According to Nijhuis & Bobbink (2012), the primary processes in Research through Art and Design involve study, recording, examination, and evaluation. Generally, this process reflects the collaboration between design and research, utilizing multiple interactions to develop solutions and test them iteratively until a final applicable output is created. A suitable example of the Research through Design process is evident in the research conducted by Cortesão et al. (2020) on the 'Really Cooling Water Bodies in Cities' project. The research involved six interactions during the process. For instance, the first interaction focused on investigating suitable environments for further research, specifically different small surface water bodies in the Netherlands. The design outcomes were tested by practitioners during a workshop, leading to the establishment of final testbeds. These testbeds were then utilized in subsequent design interactions, such as determining the most effective ways to create cooling effects in water bodies. Each iteration was tested and refined, illustrating the importance of employing diverse methods to assess research and design, guided by research questions and aims.

The approach, Research into Design, alternatively named Research on Design, involves using design or the design process as the primary subject of investigation (Prominski, 2016). Reflecting on the outcomes of the final design is a significant aspect of Research on Design. Other research methods within this approach include conducting comparative analyses of multiple case studies and engaging in design criticism. The Research on Design methodology, conducted through academic research, is crucial in influencing decision-making by providing insights to professional practitioners and society (Baxter & Jack, 2015).

CHAPTER 4. THEORETICAL FRAMEWORK

This chapter provides an explanation of the theoretical foundation for the participatory design of urban green spaces in multicultural environments led by design professionals. It outlines the theoretical framework guiding this research. From the mid-1960s, influential activists and urban theorists such as Jane Jacobs and William Whyte dedicated their research to exploring ways to improve the complex relationship between societies and public spaces. This collective effort gave rise to the placemaking theory, a comprehensive approach involving planning, design, and management. The central focus is enriching the connection between people and urban environments by collaboratively transforming public spaces. Through collective envisioning and rethinking of public spaces as societal constructs, placemaking practices aspire to reinforce the bond between people and their surroundings (Project for Public Spaces, 2018).

Figure 13. Project for Public Spaces. (2018). *Placemaking diagram*. [Diagram].
Placemaking. What if we built our cities around places?
https://www.pps.org/product/placemaking-what-if-we-built-our-cities-around-places

Access and Linkages refer to a location's straightforward availability and convenient connections to its surrounding areas. The boundaries of public spaces also contribute significantly to ensuring accessibility. The location's design should allow for visibility from both a distance and close proximity. The area should be easily reached on foot, via public transportation, or by car and should include designated parking spaces.

Comfort and Image are crucial factors in attracting and retaining people in a particular place. Attributes like safety, cleanliness, and recreational spaces such as benches or seating areas characterize a comfortable environment. These elements collectively contribute to the location's appeal, encouraging people to visit and spend time there.

Uses and Activities aim to establish a multifunctional environment that appeals to a broad audience. Diverse activities cater to various interests, providing people with compelling reasons to visit and potentially return. Offering activities for everyone enhances the place's attractiveness, drawing in a diverse crowd at different times throughout the day.

Sociability involves designing spaces to attract more visitors and encouraging people to actively contribute to shaping the place through a participatory design process. Engaging residents who deeply understand community needs is essential for creating improved and more suitable environments.

In general, the idea of sociability and comfortability of places and cities is the base of the Right to the City theory. French sociologist and psychologist Henri Lefebvre formulated this theory in the late 1960s and early 1970s. The core concept of the Right To The City theory is a radical restructuring of social, political, and economic relations within the city (Harvey, 2003). The theory emphasizes that cities should be designed and organized to prioritize the needs and rights of their inhabitants over commercial interests or exclusive developments. Lefebvre advocates the participation of citizens in all decisions that relate to the creation of urban spaces. The Right to actively create urban space and access to it is what Lefebvre calls the Right to the city (Lefebvre et al., 1996).

The Right to the City theory, developed by Henri Lefebvre, significantly reduces social inequality by advocating for urban spaces that prioritize social justice and provide equitable opportunities and access to resources for all residents. Lefebvre asserted that residents should actively participate in shaping the policies and projects affecting their communities (King, 2019). This not only involves providing a platform for residents to voice their opinions but, crucially, ensuring that these opinions are taken seriously and integrated into future decision-making processes. Through the active involvement of residents in the decision-making related to urban development, policies can become more attuned to the diverse needs of the entire community, mitigating the tendency to favor the interests of a privileged few.

The Right to the City theory includes two aspects which are the Right to participation and the Right to appropriation (Lefebvre, 1996). The Right to participation implies that citizens must participate in all decisions related to creating urban space. The scope of decisions that citizens must make, according to the Right to the City, includes a very wide range of areas of public life of all scales. This gives citizens a "seat at the table" and a "direct voice" in city decision-making (Purcell, 2002). This concept is related to the level of Citizen Power in a Ladder of Citizen Participation theory presented by Arnstein (1969).

The Right of appropriation includes the Right to access and use urban spaces physically. What is important is that this Right is not just to occupy already created spaces but to produce and transform spaces in such a way that they meet people's needs (Sadri & Sadri, n.d.). The usefulness of the space for citizens becomes the main aspect when deciding on its creation.

Hence, participatory design practices are based on two crucial elements: the spatial dimension, emphasizing comprehension of the connection to a place to guide the design process, and the experiential and knowledge aspect, focusing on the shared understanding and care of a place by local inhabitants.

The spatial dimension, embodied in public spaces, demonstrates adaptability to local needs yet retains a consistent and universally recognizable character across diverse locations. Despite subjective interpretations, public spaces serve as arenas for addressing challenges and devising solutions by bringing people together.

The significance of public spaces in case studies is assessed through "nonscaleability," emphasizing project specificity to a particular location, and "socio-spatiality," highlighting the interplay between social dynamics and physical spaces, underscoring the role of user engagement in shaping a place's identity.

The experiential and knowledge aspects are characterized by "being transdisciplinary" to foster integrated knowledge development through collaborative processes.

Scaleability, originating from business principles, signifies expanding without altering a concept's core. In the digital domain, numerous services prioritize scalability for efficient growth on a global scale, maintaining precision with expected linear expansion. Conversely, in urban design, small-scale urbanism aligns better with sustainable development goals than large-scale approaches, emphasizing the importance of human-scale interventions. Jan Gehl's research underscores the significance of context-sensitive and agile processes that respond to diverse urban challenges and communities, challenging the notion of scaleability in this context. The real-world settings, communities, and challenges they face are different, so the processes need to be agile and responsive to different contexts and iterations embodied in the nonscaleability context.

The concept of socio-spatiality revolves around the dynamic interplay between space and social interactions. It approves that spatial mechanisms influence social behaviors; conversely, individuals contribute to shaping existing spatial structures. Overall, socio-spatiality focuses on the role of urban spaces in the social context. Urban semiotics, a crucial component of socio-spatiality, examines how cultural symbols and material objects organize daily life in metropolitan areas, playing a significant role in shaping place identity. By recognizing socio-spatial relationships as integral to the character of a place, placemaking practices empower locals to share and shape patterns of space usage, actively participating in the ongoing process of redefining and resigning urban spaces.

Transdisciplinarity is commonly defined as the involvement of non-academic individuals in generating knowledge (Scholz & Steiner, 2015). Through transdisciplinary approaches, professionals and non-professionals can collaboratively establish shared goals and develop integrated knowledge, facilitating the acquisition of new skills by individuals from diverse backgrounds (G. Tress et al., 2005). Participation holds significant meaning in this context, and understanding its benefits is crucial. Design processes can be disciplinary, allowing professionals to concentrate on a specific aspect. They can also be multidisciplinary, enabling collaborative problem-solving under a thematic umbrella with professionals from various disciplines. Furthermore, design processes may be interdisciplinary, fostering cooperation across boundaries for integrated knowledge creation. However, it is emphasized that only transdisciplinary design processes can involve laypeople, referred to as non-academic individuals, in decision-making and knowledge-production processes.

CHAPTER 5. METHODOLOGY

This research follows the Research on Design and Research for Design methodology proposed by Prominski (2016) and aims to contribute to the Right To The City theory through a comparative analysis of case studies as well as expert interviews to deeper understand the gaps between theoretical discourse and observable situation in field of participatory design of public spaces in multinational neighborhoods.

The main objective of this thesis is to answer the main research question – "How civic participation among multinational neighborhoods can be encouraged in participatory design processes of urban greening projects?". To achieve the goal of this research and to answer the main Research Question different approaches will be employed in the methodology.

Firstly, by utilizing the Research on Design methodology, one of this thesis aim is to support the Right to the City theory through the inclusion of case studies meeting specific criteria: 1) employing urban green spaces as public realms to encourage connections among people, 2) incorporating a participatory design process, 3) being implemented within multicultural communities, and 4) reaching completion.

This part of the research, involving a comparison of case studies, will contribute to addressing the first sub-research question: "Which mechanisms can be used to enhance support design professionals navigating the complex dynamics of participatory design in a multicultural environment?".

Two case studies were selected: De Peperklip in the Netherlands and Superkilen in Denmark. The both case studies explore interactions during a professionally-led participatory design process and investigate how prior local engagements with the place influenced this process. The comparing case studies process was conducted based on the systematic literature reviews, analysing peer-reviewed documents and web sources using relevant keywords such as De Peperklip, Superkilen, participatory process and people engagement in varying combinations.

The process of investigating and comparing of the case studies was grounded on the several criteria such as "nonscaleability" and "socio-spatiality", which represent the spatial dimension of the participatory design process, as well as "being transdisciplinary" criteria, which indicates the experiential and knowledge aspect, focusing on the shared understanding and care of a place by local inhabitants. The more detailed definition of the criteria is represented in the Chapter 4. "Theoretical Framework".

By studying and comparing these case studies on the above defined criteria, particularly in terms of resident involvement in the design process, this part of research aims to test the criteria which can be used to improve the participatory design process, particularly complex multicultural environment. Understanding the mechanism of using the criteria, aligned with the research question, becomes crucial in establishing impactful projects that can enhance the participatory design process in the future. Revealing the design criteria through this comprehensive analysis can contribute to establishing a standard model and empower societies to have a voice in future design processes.

The second approach is related with Research for Design methodology via interviews which were conducted with various stakeholders involved in De Peperklip project in the Netherlands during ERASMUS exchange program at Wageningen University and Research (the Netherlands). As a result, the generated information regarding discrepancies between theoretical discourse and

the practical realities observed on-site can be applied in the future to develop 'evidence-based' design products.

This approach allows for gaining more insights of the participatory design process within diverse cultural context. Additionally, it enables addressing the second research question: "How do different factors influence community participation in multicultural environment in urban greenery projects led by designers?"

Four rounds of interviews were carried out with individuals related to Rotterdam municipality, and a housing corporation. All interviews were conducted online, following a semi-structured format where certain questions were pre-determined, while others emerged organically during the conversations. Additionally, during a field trip to the site, seven residents of De Peperklip were randomly interviewed to gather their perspectives on the project.

Semi-structured interviews are the insightful approach to better understand the complexities of participatory design process in multicultural neighbourhoods especially for creation urban green spaces, highlighting any discrepancies between what is proposed in theoretical discourse and what are actual realities observed in the field. The results derived from the analysis of these interviews can provide valuable inputs that contribute significant insights to inform and shape future design processes.
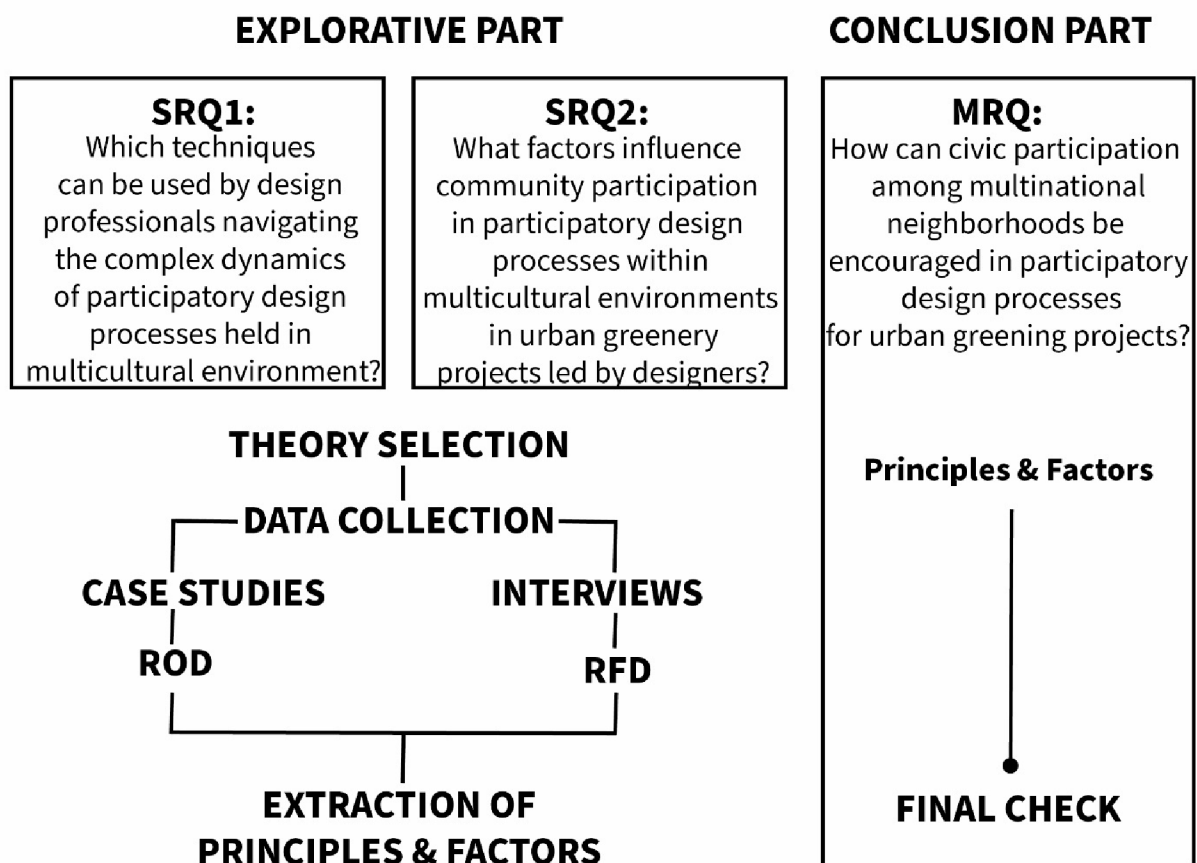
Figure 14. Illustrated by the author. (2024). *The methodological framework to achieve the main research question.* [Diagram].

5.1. SYSTEMIC LITERATURE REVIEW & CASE SELECTION

In conducting the systemic literature review, pertinent articles were identified using specific keywords such as participatory design, multiculturalism, and urban green spaces. A majority of the studies centre around participatory design for diverse urban planning objectives in a broad sense, with only a subset extending their focus to include multicultural perspectives. This current study aligns with this category, by aspiring to empower individuals to shape the future, using their diverse backgrounds and knowledge to enhance the design process and optimize outcomes.

Two case studies were chosen for in-depth examination due to their characteristics and features based on following criteria:

1) employing urban green spaces as public realms to encourage connections among people,
2) incorporating a participatory design process,
3) being implemented within multicultural communities, and
4) reaching completion.

The examination and comparison of case studies were based on various criteria, including "nonscaleability" and "socio-spatiality," which address the spatial aspects of participatory design. Additionally, the criterion of "being transdisciplinary" was considered, highlighting the experiential and knowledge-based elements, with a focus on the mutual understanding and concern for a place among local residents.

Two case studies were selected for study, namely De Peperklip in the Netherlands and Superkilen in Denmark, both accompanied by relevant peer-reviewed literature.

(1) De Peperklip, the Netherlands

De Peperklip is one of the most striking architectural buildings in Rotterdam Zuid. Rotterdam is one of the largest cities in the Netherlands. From a small fishing village, the city Rotterdam developed to a large city with over 600,000 residents, 170 nationalities and became Europe's largest cargo port (Rotterdam resilience strategy, n.d.; Huck et al., 2021). Urban life in Rotterdam is exposed to the growth of population and complexity of urban society due to globalisation (Huck et al., 2021). For this reason, urban parks and social green spaces hold critical importance in Rotterdam's future in regards to developing resilience for climate adaptation and improving social cohesion (Peinhardt, 2021).

Government-funded greening initiatives such as De Peperklip, are important in creating publicly accessible green spaces for growing urban populations and climate resiliency. A participatory process in this matter seems to be the optimal way for engaging the needs of the end-users to achieve success in designing and activating these social spaces.

De Peperklip project aimed at increasing biodiversity and social coherence in multicultural neighborhoods. De Peperklip project consists of the social spaces on the ground level of the complex including a multipurpose sports court, a playground, and extensive green areas located in front of the housing units and the central area along with seating pockets.

Figure 15. Resilient Rotterdam. (n.d.). *Aerial photograph of De Peperklip*. [Photo]. The Resilient Peperklip. https://shorturl.at/BORYZ

(2) Superkilen, Denmark

Superkilen, a 750-meter urban park located on the edge of Nørrebro in Copenhagen, Denmark, was collaboratively designed by BIG Architects (Copenhagen, Denmark), Topotek 1 (Berlin, Germany), and Superflex (Copenhagen, Denmark) between 2009 and 2010. The project emerged through a public competition initiated by the Municipality of Copenhagen and Realdania, a philanthropic association, and was opened in June 2012 after a two-year implementation period (Akšamija, 2016).

The park is strategically situated in an ethnically diverse and socially challenged neighborhood, with 27.6% of Nørrebro's residents being immigrants or descendants of first-generation immigrants in 2011 (Akšamija, 2016). The Nørrebro district covers an expanse of 3.82 square kilometers and is home to approximately 70,000 residents (Akšamija, 2016). The area's history is marked by youth crime, high unemployment rates, and pervasive social issues, making urban development not only crucial but also exceptionally challenging (Turan, 2021).

The focus on participatory design within this multicultural environment underscores the commitment to involving the community in shaping the park's identity. Superkilen goes beyond transforming the physical landscape; it aims to contribute to the social revitalization of the neighborhood by addressing the complex challenges ingrained in its history. The park's unique combination of cultural elements and multifunctional features reflects a comprehensive approach to urban design, aiming to create a positive impact on both the physical and social aspects of the community.
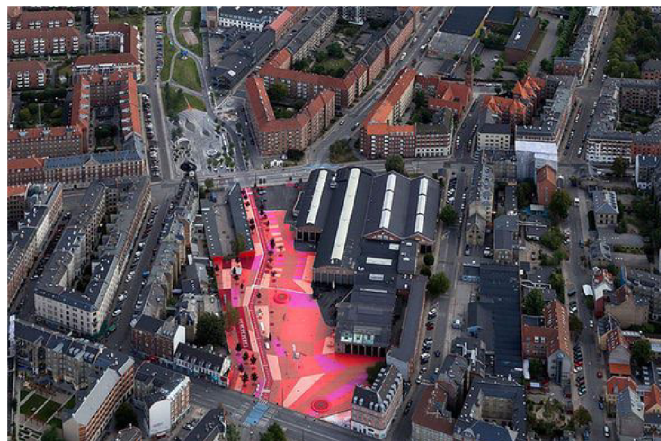

Figure 16. McCracken, K. (2016). *Aerial photograph of the Superkilen*. [Photo]. Atlas Obscura. https://www.atlasobscura.com/places/superkilen

In both instances, participatory design was explicitly employed to foster local social and spatial justice, as the municipalities and design teams anticipated that this approach would result in designs promoting greater equity between the community and its surroundings. The similarities and differences between the cases are detailed in Table 1.

Table 1. Similarities and differences of cases studies

	De Peperklip, the Netherlands	Superkilen, Denmark
	Similarities	
Place	A multicultural residential semi-public courtyard designed to enhance the living environment by incorporating green spaces, featuring a sports court, a playground, and extensive green areas situated in front of both housing units and the central zone.	An urban green area within diverse neighbourhood which created with three formally distinct zones – the Red Square, the Black Market and Green Park – each adorned with a diverse array of urban objects collected from various parts of the world.
Capabilities	Top-down approach - Participatory design project forced by the Rotterdam Municipality and the social housing corporation	Top-down approach - Participatory design project stimulated by the Municipality of Copenhagen and a philanthropic association Realdania
Research position	Outside investigator, investigating documents and web sources	Outside investigator, investigating documents and web sources
The design process	People involvement since the beginning until the end of the design process via several meetings	People involvement in the beginning of the design process with the stress to "Participation Extreme" to involve typically overlooked groups
	Differences	
Developers	Landscape Architect of Rotterdam Municipality in corporation with housing organisations with residents	Equal collaborative design by BIG Architects (Copenhagen, Denmark), Topotek 1 (Berlin, Germany), and Superflex (Copenhagen, Denmark) with residents involvement
Scale	Local scale of social-housing courtyard	Residential scale of multicultural neighbourhood

5.2. SEMI-STRUCTURED INTERVIEWS

The choice of semi-structured interviews emerges as a particularly insightful approach, especially when highlighting the complexities of participatory design processes in multicultural neighbourhoods, particularly those directed towards creating urban green spaces. This method allows for a detailed exploration, highlighting any disparities between theoretical discourse and the practical realities observed on-site. The results received from the analysis of these interviews serve as valuable inputs, offering insights that can significantly inform and shape future design processes. The emphasis on a semi-structured approach provides flexibility in addressing emerging

topics while maintaining a framework that allows for a comprehensive understanding of the dynamics at play in the participatory design of multicultural urban spaces.

The transformation of De Peperklip in Rotterdam is part of a series of projects that have accessed European funding allocated for increasing green spaces within the city. The strategy employed in De Peperklip involves uniting various stakeholders to collaborate in generating additional benefits for the environment and the building's residents. Apart from the housing corporation Vestia, participants include residents of De Peperklip and representatives from various municipal departments. This collaborative effort and active involvement enhance the capacity of both the organization and the building's inhabitants to navigate the challenges and opportunities that the future may present.

To gain a deeper understanding of the detailes within the participatory design process, four rounds of semi-structured interviews were conducted. These interviews involved two landscape architecture designers and a project manager from the Rotterdam municipal authorities who were familiar and most of them were engaged in the De Peperklip project in the Netherlands, along with a representative from the housing corporation of De Peperklip. The housing organization was responsible for the rooftop of De Peperklip, primarily focusing on integrating greenery and increasing biodiversity. However, the Rotterdam municipality primarily oversaw the greenery of the courtyard. The greenery on the rooftop was implemented without involving the community in the design process due to safety regulations that restricted public access to the area. Conversely, the courtyard greenery was developed through participatory design, recognizing the significance of residents' future use of this space.

During the interview sessions, various key stakeholders of the De Peperklip project participated, with predominance number of people who has backgrounds in landscape architecture. It was essential not only to engage with a landscape architect directly involved in the design process of De Peperklip but also to invite a second landscape architect familiar with the project and experienced in other participatory design initiatives. The primary aim of involving multiple landscape architects aligns with the overarching goal of considering the perspectives of future users in this research. Landscape architects and urban designers constitute the target audience for whom the data and findings of this research will prove beneficial.

Additionally, during a field trip to the site, seven residents of De Peperklip were randomly interviewed to gather their perspectives on the project. The interviewed residents represented diversity in terms of gender, with both males and females participating. They also covered various age groups, including individuals aged 15-25, 25-35, and 35-45, as well as different nationalities such as Moroccan, Turkish, Indonesian, and Surinamese. This diverse representation was crucial for understanding the extent of community involvement. However, it was challenging to find willing participants due to time constraints, language barriers encountered during the process, and the limited number of people in the neighborhood during working hours.

The stakeholder interviews were conducted online in October 2021, and the interviews with residents were also conducted during a site visit on the week day in October 2021, preceding the stakeholder interviews. These interviews were all part of the "Reflections on Planning and Design Practices" course during the ERASMUS exchange program at Wageningen University and Research.

For the stakeholder interviews, a semi-structured format was utilized, where certain topics and questions were predetermined, while others emerged during the interview process. The

selection of questions and topics was based on the interviewees' specialties, fields of expertise, roles in the design process of De Peperklip, and the type of information necessary for the research.

The first interview was conducted with a landscape architect from the Rotterdam municipality. While this participant was not directly involved in the De Peperklip project, she were familiar with it as part of the broader Rotterdam Goes for Green initiative and experience with other participatory design projects. The interview structure focused on the interviewee's experience with the Rotterdam Goes for Green project and other participatory design projects with a top-down and bottom-up approaches. The overarching goal was to understand how the "Rotterdam Goes for Green" project selected site-specific locations for improvement and how residents' opinions could influence this choice, as well as to explore the interviewee's personal experiences with other design processes integrating both top-down and bottom-up approaches. The main questions included: Can you please explain the overall ideas of the "Rotterdam Goes for Green" project and why it is important? How were the site-specific locations chosen for this project? Can residents of a neighborhood apply and become part of this or other projects? Do you perceive differences between projects initiated by the municipality versus those initiated by residents?

The second interview involved the project manager of the "Rotterdam Goes for Green" project from the Rotterdam municipality. De Peperklip was a part of the "Rotterdam Goes for Green" project. The interview aimed to uncover the overall benefits of the project and receive insights applicable to future projects. Additionally, the interview was directed to understand how the municipality, architects, and residents collaborated in the participatory design process within the De Peperklip project. Other key questions included: How did you engage the public/private sectors to develop the project? What lessons were learned, and what changes or implementations from De Peperklip would you consider for other projects?

The third interview was conducted with a participant from the Housing Organization "Vestia." This participant was directly involved in the design of the green roof of De Peperklip and had limited knowledge about the courtyard design with community participation. It was essential to include this participant in the research because the Housing Organization provided a different perspective on the participatory design process. The interview focused on gaining insights from their experiences with other projects and assessing their evaluation of De Peperklip. The main questions included: Have you been involved in participatory projects before, and if so, which ones? What actions do you take if inhabitants are not initially willing to participate? In your opinion, what could be the reasons for a low participation rate?

The last, but not least, interview was conducted with the landscape architect who had been directly involved in the De Peperklip project. This participant did not join the project from its inception; rather, they became involved after others had already been working on it for some time. The primary objective of involving this landscape architect was to examine the main difficulties and challenges encountered during the project's implementation, with a particular focus on people participation. It was crucial to understand how the process was organized, who participated, and the pros and cons that could inform future designs. Accordingly, the main questions posed were: Can you please share your experience of integrating people into the design process in the De Peperklip project? What difficulties did you face during the participatory design process? How do you plan to apply this experience to improve other design processes in the future? What improvements or changes would you like to see in the participatory design process for De Peperklip?

The interviews with residents took place in the neighborhood of De Peperklip. Each interview lasted approximately 5 minutes per person. All questions were asked politely, avoiding the sharing of opinions and leading questions. Interviewees were approached randomly and asked if they would be willing to answer questions about their personal experiences with the De Peperklip project and whether they were residents. During the interviews, the interviewee was alone to ensure the personal opinions expressed were not influenced by others. The main questions asked during the interviews were: 'Are you familiar with the project involving the greening of the courtyard of De Peperklip?' and 'What are your thoughts on this project? Did you participate in it?' The answers provided by the interviewees were noted during the interview process.

CHAPTER 6. ANALYSIS OF CASE STUDIES & INTERVIEWS

6.1. ANALYSIS OF CASE STUDIES

This chapter presents the findings from the analysis of two case studies: De Peperklip in the Netherlands and Superkilen Park in Denmark. The goal is to explore mechanisms supporting design professionals in navigating the complexities of participatory design processes in multicultural environments. The selection criteria for these cases include their use of urban green spaces to foster connections, incorporation of participatory design, implementation within multicultural communities, and successful completion.

The process of investigating and comparing of the case studies was grounded on the several criteria such as "nonscaleability" and "socio-spatiality", which represent the spatial dimension of the participatory design process, as well as "being transdisciplinary" criteria, which indicates the experiential and knowledge aspect, focusing on the shared understanding and care of a place by local inhabitants. All the data using for case studies comparative analysis was conducting via the systematic literature reviews, analysing peer-reviewed documents and web sources.

A significant factor uniting these projects is their diversity in scale and location. De Peperklip, situated in the Netherlands, is a social-housing courtyard primarily benefiting local residents. In contrast, Superkilen Park in Denmark serves as a residential area that not only engages the neighbourhood but also attracts citizens of Copenhagen and even global tourists, given its widespread popularity.

This diverse selection aims to build a knowledge base applicable across various scenarios, considering different locations and their unique characteristics.

De Peperklip, the Netherlands
Location
De Peperklip is a residential building, which is located in the Rosestraat in Rotterdam Feijenoord, Rotterdam (see figures 17 & 18). It is a 931 m long social housing complex with 11,000 m2 of roof surface in the Feijenoord district of Rotterdam, designed by Carlos Weeber in 1979, delivered in 1982 (Nederlands Architectuur Instituut, n.d.). This building consists of 605 social housing units and 8 commercial spaces, accommodating a total of 1,300 residents with diverse cultural backgrounds (Resilient Rotterdam, n.d.).

Spatial Characteristics
De Peperklip represents a large-scale building compared to typical small-scale Dutch architecture. The architect of De Peperklip, Weeber, explained the large scale as a response to competing structures in the surrounding area, such as large port components on a grand scale (Top010 nieuws, 2013).

At the glance, the building's name might appear to be linked to its shape; however, it is, in fact, derived from the clippers that historically unloaded pepper in the ports of Rotterdam-South. (Rotterdamse Daken Dagen. 2020). The architect designed the building to resemble stacked containers, creating a visual connection with the former port area (Top010 nieuws, 2013). De Peperklip consists of three taller rounded sections, each comprising six or eight stories, along with intermediate segments of four stories, and it includes a central courtyard.
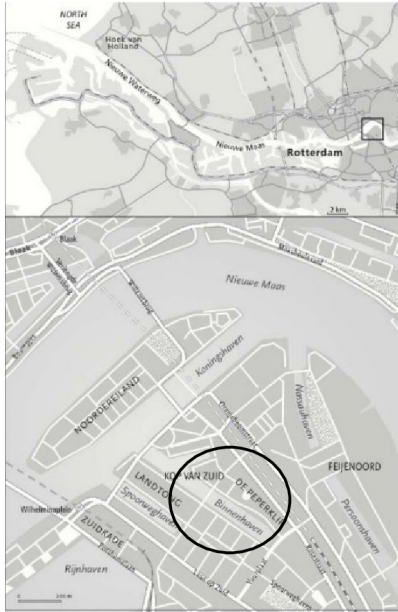
Figure 17. Kokx, A. (2012). *The location of De Peperklip*. [Map]. ResrachGate. https://shorturl.at/clAMU

Figure 18. Lemcke, D. (1985). *The location of De Peperklip*. [Photo]. Wikimedia. https://shorturl.at/fsx38

Although the place accommodated large numbers of people, the neighbourhood of De Peperklip showed a low greenery rate and many households did not have their own gardens. In 2016, the social housing corporation decided to "restore De Peperklip's old glory and make it "more sustainable, safer and aesthetic" (Stedenbouw, n.d.). De Peperklip as a part of the "Rotterdam goes for green" project was chosen for restoration as it wasn't a "liveable" environment and lacked aesthetics when considered from an architectural point of view.

Figure 19. Friendsofsdarch. (1987). *De Paperklip*. [Photo]. Friends of San Diego Architecture Image Library. https://shorturl.at/gLUX3

Figure 20. Hanswijk, F. (2018). *De Paperklip*. [Photo]. Vers Beton. https://shorturl.at/fmsX1

De Peperklip project aimed at increasing biodiversity and social coherence in multicultural neighborhoods. One of the parts of this project is a green roof, which consists of four main themes: water, wood, gravel, and hills or biodiversity development. The roof has resilient elements to

climate change. It will offer cooling shade and air conditioning for hot summer days as well as function as a buffer for peak precipitation (Resilient Rotterdam, n.d.).

Another part of De Peperklip project consists of the social spaces on the ground level of the complex including a multipurpose sports court, a playground, and extensive green areas located in front of the housing units and the central area along with seating pockets. The theme of water, wood, gravel, and hills was also integrated into the courtyard design to make a connection with the roof and attract more biodiversity into the area.

Figure 21. Evers+ Mandes. (2021). *Sketch of De Paperclip*. [Sketch]. Emconsult. https://shorturl.at/jQSV7

Social History

De Peperklip has a rich history connected to a significant number of migrants. Its origin is linked to the economic crisis of the 1970s (Maasmond, 2019). The distribution of this housing complex was carried out indifferently with the aim of quickly filling vacant spaces, creating the impression that De Peperklip became a place for urgent needs (van den Bent, 2010).

The initial residents of De Peperklip were primarily individuals with low incomes, many of whom were immigrants. These newcomers, unaccustomed to living in high-rise apartments, had to start a new life in a residency located outside the city centre, with no residential houses, shops, or other infrastructure nearby (Maasmond, 2019). Several warehouses next to the ground-floor apartments were misused, some apartments were illegally sublet, and despite intense police action, crime and illicit trafficking flourished (van den Bent, 2010). The unique shape of the buildings also created areas with less visibility, contributing to the unsafety of the residential area (Maasmond, 2019). Residents were even ashamed to live in De Peperklip at that time.

De Peperklip was designed as social housing for lower-income residents, aiming to make it more affordable. As a result, inexpensive and unadorned materials were utilized in its construction. (Maasmond, 2019). It became evident that De Peperklip needed reparations. The first reparative works were undertaken two years after the building's implementation, and twelve years later, the entire building underwent a complete renovation. Many physical and social decisions were made regarding the situation in De Peperklip; however, they did not entirely resolve the issues.

In 2002, the Housing Corporation Vestia made a decision to focus not only on building renovation but also to consider the residents and social issues. Large physical investments, along with improvements to storage areas and new entrances, were made in 2006. Additionally, a strong

commitment to management, women's emancipation, and integration of new lifestyles was incorporated (Maasmond, 2019). These efforts improved the social situation within the residency, which accommodates a total of 1330 residents of 125 nationalities (Maasmond, 2019).

The design process

Starting with a participatory design development process, the project coordinators tried to reach out to the residents by inviting them to meetings held on the project site. Indicated by the project coordinators working with the municipality, the invite was sent out to the residents by mail and the posters placed on the main entrances to the building. During this meeting, the designers tried to question the needs of the residents to understand the priorities they can take into consideration while designing the space. Another meeting with the help of the housing association was held to get feedback on the design proposals before the tendering process (see Figure 22 & 23). Also, a committee from the municipality knocked on most of the doors on the complex to gather opinions and promote the benefits the residents were seeing from having increased green spaces in their neighbourhood. Two big plan posters were hung at street corners with pictures for explanations.

Children and young individuals actively participated in the design process. In May, with the guidance of a graffiti artist, they collaborated to create a mural for the wall adjacent to the basketball court. Drawing inspiration from a guided tour of the local flora and fauna led by a forest ranger, the children expressed their perspectives on nature and sustainability by painting vibrant scenes on paving slabs. These decorated slabs were then assembled to form an animated tiled path within the courtyard (Resilient Rotterdam, n.d.).

Figure 22. Resilient Rotterdam. (n.d.) *People integration into the design process of De Peperklip.* [Photo]. The resilient Peperklip. https://shorturl.at/BORYZ

Figure 23. Resilient Rotterdam. (n.d.) *People integration into the design process of De Peperklip.* [Photo]. The resilient Peperklip. https://shorturl.at/BORYZ

Superkilen, Denmark

Location

The Superkilen is 750-metre-long public space locates between Nørrebrogade and Tagensvej (see figure 24 & 25) and divided into the three main areas: a Red Square, a Black Market and a Green Park. The Red Square connects to the Black Market, a central and accessible area within the park, transitioning to the Green Park in the north (Akšamija, 2016). The Superkilen area

is surrounded by five- to six-storey residential buildings, primarily social housing, roads, a parking lot, office spaces, and a kindergarten. Continuing north, the Grand Mosque of Copenhagen is visible, built in 2014 as the first purpose-built non-Ahmadiyya mosque in Denmark, drawing congregants from various parts of the city.

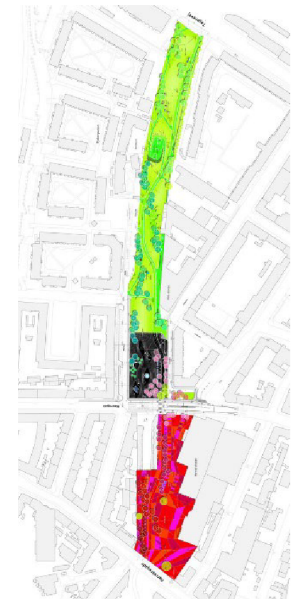Figure 24. Aksamija, A. (2016). *The location of the Superkilen.* [Map]. Superkilen. On Site Review Report. https://shorturl.at/vyFP3

Figure 25. Squarespace. (2019). *The location of the Superkilen.* [Map]. Danish Architecture and Design Review. https://shorturl.at/aeyD1

Spatial Characteristics

Superkilen, named for its wedge-shaped ("kilen") design, signifies an improvement or enhancement ("super") of this unique space. Stretching between two significant roads, Tagensvej to the north and Nørrebrogade to the south, this elongated wedge not only enhances connectivity between these roads but also facilitates pedestrian and bike paths. The park effectively bridges the east and west parts of the neighbourhood, overcoming previous accessibility challenges.

Within Superkilen, a diverse range of infrastructure elements cater to outdoor experiences, offering amenities like playgrounds, sports grounds, and benches. This thoughtful design transforms the park from a mere transit route into a vibrant space for public activities and interactions. The sequential arrangement of public squares invites individuals to explore and engage with the park more fully.

Each section of Superkilen serves a distinct purpose. The Red Square hosts cultural and sporting activities, the Green Park focuses on play and sports, while the Black Market creates an urban living room environment. Notably, the park features 108 objects representing the 62 home countries of local residents, forming an outdoor exhibition of global cultural artefacts. This mix of diverse cultural elements provides a unique and enriching everyday-life experience, allowing residents and visitors alike to encounter fragments of other cultures seamlessly.
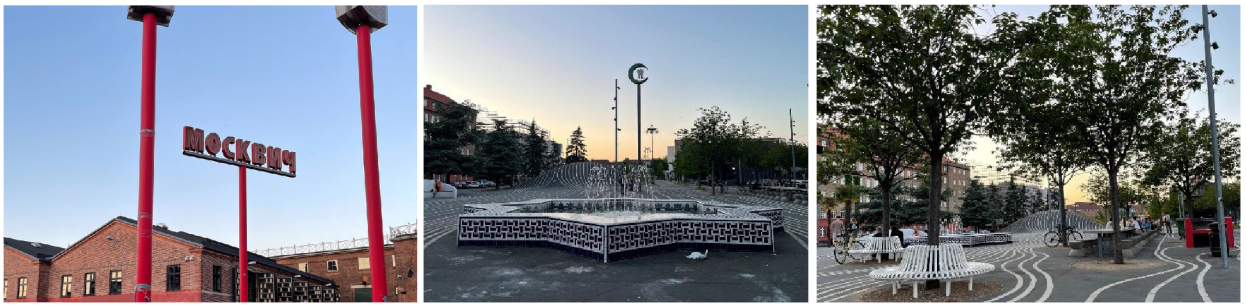
Figure 26. Made by author. (2023). *Cultural artefacts of the Superkilen*. [Photos]

In general, Superkilen emerges not just as a physical space but as a dynamic cultural landscape within Copenhagen, where daily interactions with various elements contribute to a vibrant and inclusive community experience as well as transform exotic cultural artefacts into the everyday-life cultural landscape of the city.

Social Characteristics & History

The neighbourhood Nørrebro, where the Superkilen Park is located, has a rich history steeped in social and political activism. One of the example is event the Battle of the Commons, which took place 1872. During this battle, the local labour movement protested against long working hours, leading to a violent clash with the police (Akšamija, 2016). Over the past 150 years, immigrants were involved in political conflicts in Nørrebro due to differect reasons. For instance, in February 2008, immigrant youth engaged in several days of setting fires in response to perceived racist and offensive treatment by the police toward local immigrant inhabitants (Akšamija, 2016).

Figure 27. News Agencies. (2006). *Social protest in Nørrebro*. [Photo] Al Jazeera. https://shorturl.at/bpI07
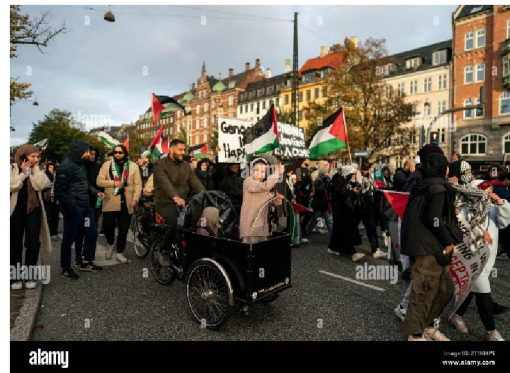
Figure 28. Alamy (n.d.). *Social protest in Nørrebro*. [Photo] Alamy. https://shorturl.at/dDIO1

Nowadays Nørrebro is in the gentrification process, which increasing the interest of middle-income families. The character of the neighbourhood is shaped by cultural diversity and a revolt tradition stays significant. These historical characteristics play a crucial role in understanding the impact of projects like Superkilen on the ongoing transformation of the Nørrebro neighbourhood.

The design process

The Superkilen project, a collaboration between BIG – Bjarke Ingels Group, Topotek 1, and SUPERFLEX, aimed for inclusive design through public participation. Local residents were invited to propose specific objects for the park, promoting cultural diversity, such as benches, trees, playgrounds, bins and others. The different methods were used to integrate more people into the design process, such as direct contacts to residents, advertisements in newspapers and posters as well as online call (figure 29). SUPERFLEX went further, conducting "Participation Extreme" to involve typically overlooked groups, who was invited to travel around different countries to find these objects. Objects from Thailand, Spain, Palestine, USA, and Jamaica were incorporated, creating an exhibition of global urban furniture. This method of integrating cultural objects contributes to create sense of place to the Superkilen park though emotional connectivity, which will improve the relationships between residents and visitors. A special app was created to offer in-depth information about the origin of the cultural objects and their story (figure 30). At the beginning, some locals initially resisted the non-traditional design due to a lack of increased high-quality green space. However, Superkilen includes the green area with trees and green surface, the Red square and Black Market are used more often compare to the Green area. Overall, Superkilen has become a vibrant community meeting point, appreciated for its activity and identity marker. Despite challenges in the selection process, the project successfully reflects the diverse landscape of the Nørrebro neighbourhood.
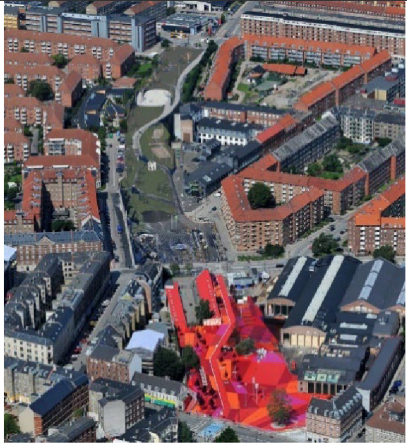

Figure 29. Aksamija, A. (2016). *Public participation in the design process of Superkilen.* [Photo]. Superkilen. On Site Review Report. https://shorturl.at/vyFP3

Figure 30. Aksamija, A. (2016). *The example of app about the origin of the cultural objects and their story*. [Screenshot]. Superkilen. On Site Review Report. https://shorturl.at/vyFP3

Table 2. Case Study Details

	De Peperklip	Superkilen
Location	Rotterdam, the Netherlands	Copenhagen, Denmark
Area	9 000 m^2	33 000 m^2
Aim	Create spaces for 'place-making,' incorporating a combination of power, buffering, and the reuse of water, along with the development of public spaces and gardens within the participatory design process	Recreate the neighborhood's image by enhancing connectivity and fostering an increased sense of security in surrounding residential areas. Integrate locals into the process, encouraging them to propose objects as an exhibition of objects from around the world

Finance	Municipality of Rotterdam, Housing Corporation Vestia, water boards, energy corporations, investors, European Union	Municipality of Copenhagen, the private philanthropic association Realdania, and the Områdefornyelsen for Mimersgade neighbourhood. The Danish Arts Council supported the realisation of five projects by SUPERFLEX entitled "Participation Extreme"
Collaborators	Municipality of Rotterdam Housing Corporation Vestia Engineers General contractor Local residents of different age	Copenhagen municipality Realdania Architecture - BIG Landscape architecture – TOPOTEK 1 Art consultancy – SUPERFLEX Engineers - Lemming & Eriksson General contractor – Aarsleff Communication - Help PR & Kommunikation Kilebestyrelsen, local governance board involved in selection of objects Local individuals, communities and organisations

Nonscaleability

In urban design, small-scale urbanism is often seen as more related with sustainable development goals compared to large-scale approaches, as it emphasizes the importance of human-scale interventions. Real-world settings and communities face diverse challenges, requiring flexible and responsive processes that can adapt to different contexts and iterations. This adaptability is embodied in the concept of nonscaleability.

As mention in the problem statement, with an estimated 68% of the world's population expected to inhabit metropolitan areas by 2050, and around 60% of urban spaces still awaiting development, both local and intergovernmental organizations have started giving greater attention to the revitalization and densification of urban areas (UN, 2018). Despites on the rapid urbanization and population growth people most of time face the societal isolation in cities.

By promoting citizen participation, design of public green areas can be more effectively tailored to meet community needs, values, and preferences. This fosters a sense of ownership and responsibility among participants while also facilitating capacity-building for achieving sustainable outcomes.

Both studied neighbourhoods accommodates a diverse group of people from different backgrounds who face different problems such as unemployment, lack of green areas causing health issues. As the vast majority of the homes in this neighbourhood are owned by housing corporations, the development of a dialogue between residents and local stakeholders becomes critically fundamental to achieving a healthy, and physically and socially sustainable living environment.

The critical point concerning the nonscaleability aspect of the two projects is how they involve people in participatory initiatives within a multicultural environment. These projects direct to creating urban green spaces in a multicultural environment with the integrating people into the design process. Despite both projects focus on the integrating people into the design process in a multicultural environment, however each project has a unique initial aim.

- Redesign for increasing resiliency: De Peperklip was focused on the increasing biodiversity by integrating more greenery to the neighbourhood as well as creating connections with the green roof, as was mentioned during the interview Rotterdamse Daken Dagen (2020) along with the development of public spaces and gardens within the participatory design process.

- Accommodating increasing multicultural population: Superkilen aimed to accommodate the increasing multicultural population by enhancing connectivity, fostering a sense of security, and integrating locals into the design process, encouraging them to propose objects for an exhibition.

People-centered studies are inherently shaped by and dependent on the unique characteristics of specific spaces, which renders them intricately connected to their respective locations. It is crucially important that these studies possess the flexibility to be applicable at different phases of the planning and development process, as well as being scalable and adjustable for utilization in diverse national or international contexts, as emphasized by Clarke (2021).

What is common in these case studies is the way of inviting people into the design process such as direct contacts to residents, advertisements and posters as well as online call. During the design process some interviews and meetings with residents were conducted as well in the both case studies.

The world is currently experiencing an unprecedented period of extraordinary turbulence. The rapid and extensive changes on a global scale, the heightened interconnectivity of social and natural systems worldwide, and the escalating complexity of societies and their effects on the biosphere contribute to a notable degree of uncertainty and unpredictability (Gallopin, 2002). Scenarios are a good tool for communication, conflict management, and long term participation. The participatory design process there were conducted with creating different scenarios for these two projects.

After a failed attempt to gather the opinions of residents about the main ideas and wishes for the De Peperklip project due to a lack of people and opinions, a backcasting planning approach was employed (Okada et al., 2022). In this approach, the initial step involved the formulation of a desired future vision and specific goals. This was achieved through the creation of design proposals for the courtyard, outlining the envisioned changes and improvements. This method aims to inspire, explore, and express values and emotions. Subsequently, the design proposals were presented for discussion and clarification with the residents, ensuring that their input and perspectives were considered in refining and solidifying the proposed vision and goals for the project.

In contrast to the backcasting approach of De Peperklip project, the Superkilen project embraced a roadmapping strategy (Okada et al., 2022), starting from the present and moving towards a future vision. Throughout the design process, local communities were participated in shaping the park's envisioned future. Residents were encouraged to propose specific objects, such as benches, trees, playgrounds, and bins, contributing to the cultural diversity of the space and

create sense of place, leading to decrease of stress level and increase of sense of community though emotional connectivity.

SUPERFLEX, the project's creators, took an innovative step by implementing as they named "Participation Extreme," an initiative aimed at involving typically overlooked groups. Participants from these groups were invited to travel to various countries to discover and propose objects for the park. This global exploration resulted in the incorporation of items from places like Thailand, Spain, Palestine, the USA, and Jamaica, forming an exhibition showcasing diverse urban furniture. The engagement of a broad spectrum of perspectives ensured that the roadmapping process was enriched with a variety of insights, preferences, and needs, fostering a collaborative and inclusive approach to shaping the landscape.

These case studies highlight a common trend of employing participatory design processes that integrate individuals from diverse cultural backgrounds. However, the distinctive methods used in conducting the design process to achieve their respective goals set them apart. Considering the future application of these approaches, it becomes crucial to recognize the need for adjustments taking into account the unique characteristics of each new physical and social setting (Tsing, 2012).

Since participants, contexts, communities, and challenges differ significantly and are not interchangeable, the projects exemplify adaptability. This adaptability enables them to be agile and responsive to the specific conditions of each new site or iteration. In essence, understanding the nuances of each location and being flexible in the approach becomes imperative for the successful implementation of participatory design processes in diverse environments.

Socio-Spatiality

A critical examination of the diversity within urban spaces brings attention to the concept of socio-spatiality. In this context, socio-spatiality refers to how the configuration and design of urban spaces influence human behaviour within the specific social and contextual frameworks that surround them. The organization of these spaces plays a direct role in shaping societal dynamics, as mentioned by Osti (2015).

The alterations individuals make to urban spaces initiate a transformative process where the physical layout of spaces becomes interconnected with their social meanings. This interplay results in the unintended reshaping of the urban environment. Such considerations align with the principles of Sustainable Development Goals, notably #11, which emphasizes the creation of sustainable cities and communities, and #17, which underscores the importance of sustainable partnerships for achieving broader societal and environmental objectives. The pivotal role emphasizing the importance of space and the strength of relations confront the idea that space and society are circular of design and spatial organization in fostering inclusivity, diversity, and meaningful social interactions within urban settings is crucial in creating sustainable places.

Highlighting the specific themes participants emphasized in these participatory processes, such as the excessive height of play structures, as this could cause kids to roll over and get themselves damaged, and the proposal to establish pedestrian and bike zones connecting specific sections of the street. These requests underscore crucial issues affecting local residents, including the safety of children and accessibility in public spaces. Anticipating a growth in urban populations, it becomes evident that these challenges may intensify, emphasizing the importance

of involving those who frequent these spaces daily in finding solutions, given their insights into how the spaces will be utilized post-development.

De Peperklip project strategically addresses the issue of insufficient greenery by fostering connections between people and urban spaces. The project coordinator highlighted the initiative, stating that specific paved areas within De Peperklip are being transformed into green spaces through the establishment of self-managed gardens, aligning with the residents' desire for more nature integration. Notably, residents residing in De Peperklip have enthusiastically taken on the responsibility of cultivating these self-managed gardens. The primary goal is to establish privately maintained areas that not only enhance the greenery but also act as a deterrent to vandalism, fostering a cleaner and more organized neighbourhood. This approach underscores the proactive participation of residents in the cultivation and upkeep of green spaces, aligning with their preferences and contributing to a more vibrant and sustainable urban environment within De Peperklip.

In the participatory design phase of the Superkilen project, the designers took an additional step by arranging trips for residents from various countries to visit their respective countries of origin. During these trips, the residents were tasked with selecting and bringing back identity objects that would establish robust connections and evoke a profound sense of presence within the Superkilen project. This initiative aimed to infuse the urban space with diverse cultural elements, fostering a strong sense of community and belonging among the residents (figure 31).

As an illustration, residents Conni and Tove undertook a journey to Spain where they encountered a symbolic bull, evoking a distinct sense of space and a profound sense of place (AA School of Architecture, 2018). This bull, serving as a cultural emblem, was subsequently integrated into the park area, contributing to a heightened connection for people with their cultural roots. This adaptation aimed to enhance the community's cultural identity, allowing individuals to feel a stronger bond with their heritage within the park environment.
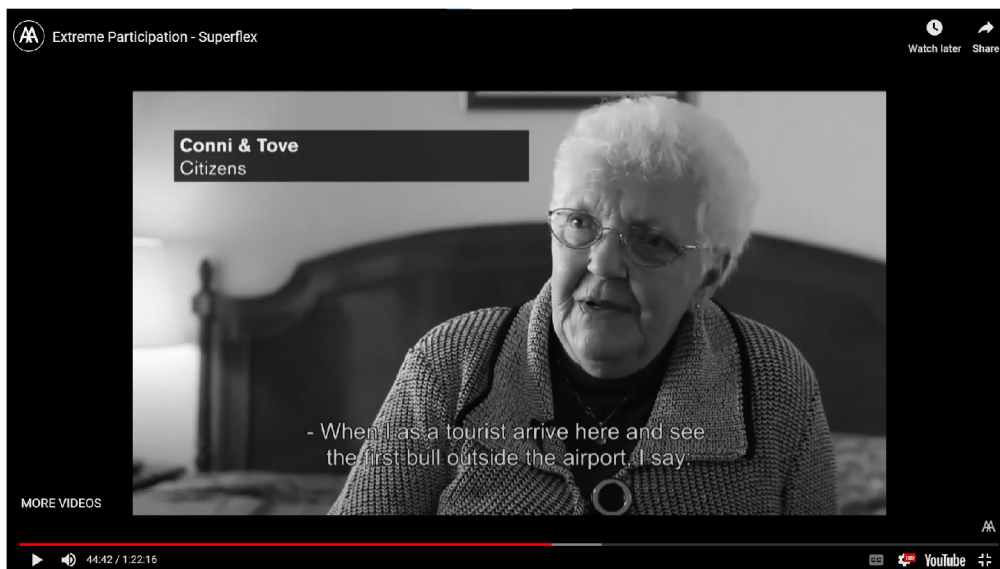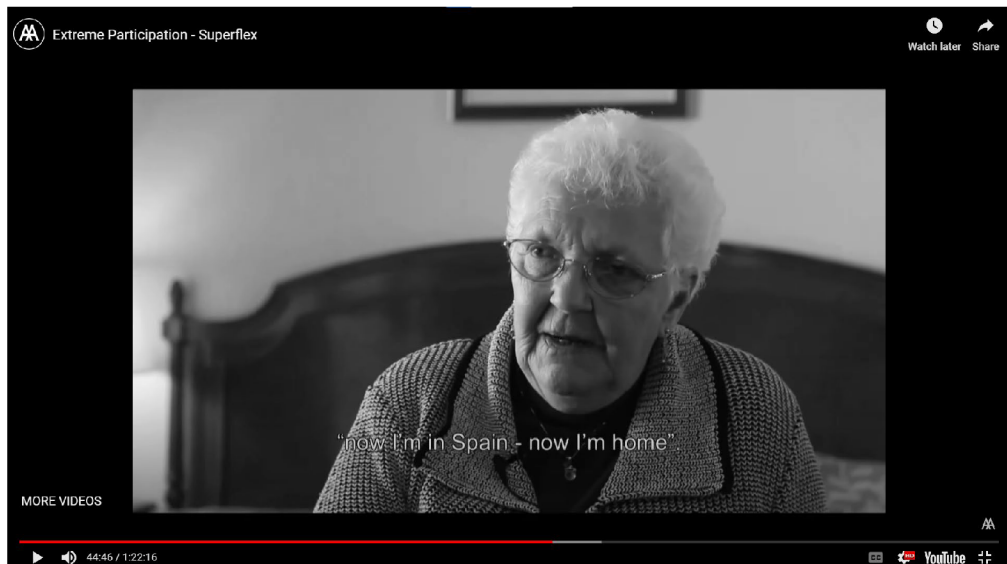
Figure 31. AA School of Architecture. (2018). *Fostering sense of community within residents*. [Screenshot]. Extreme Participation – Superflex.
https://www.youtube.com/watch?v=hi1wklC7wuk

Another symbolic action was the Soil from Palestine initiative, the project involved the collection of actual soil from various locations in Palestine, including the Arab part of East Jerusalem, Ramallah, the West Bank, and predominantly from the occupied Golan Heights at the Syrian border. The concept for incorporating this material originated from two Palestinian girls, Hiba and Alaa, who, despite having never visited Palestine, expressed their connection to their homeland through stories (Akšamija, 2016). The "Participation Extreme" facilitated their journey to Palestine, allowing them to bring back soil to Superkilen. This soil was then placed on top of a small hill on the Black Market (figure 32).

Initially, the Palestinian red soil contrasted with the existing soil on the hill. However, as time passed, the soils merged, symbolically representing the processes of migration, cultural integration, and the blending of identities. This transformation echoed the broader narrative of individuals coming together and forming a harmonious blend within the multicultural context of Superkilen.
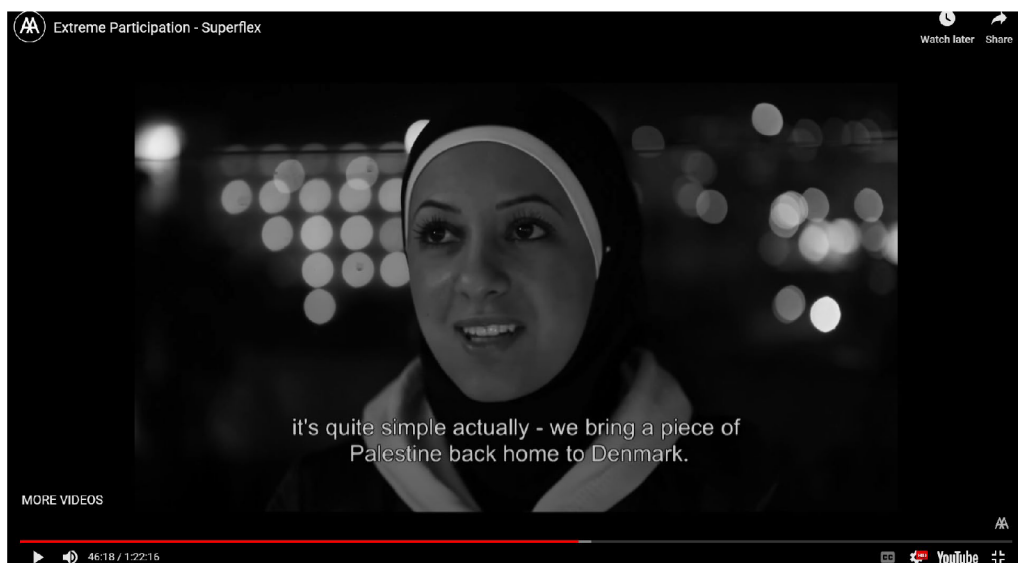
Figure 32. AA School of Architecture. (2018). *The Soil from Palestine initiative*.
[Screenshot]. Extreme Participation – Superflex.
https://www.youtube.com/watch?v=hi1wklC7wuk

These examples highlight how the design and utilization of spaces play a crucial role in shaping and influencing social dynamics, suggesting a more interconnected relationship between spatial environments and societal interactions.

These examples highlight how the design and utilization of spaces play a crucial role in shaping and influencing social dynamics, suggesting a more interconnected relationship between spatial environments and societal interactions.

Examined through these projects, it becomes apparent that physical spaces have the power to evoke thoughts and emotions in individuals, influencing how they perceive and relate to these places. This, in turn, leads to a transformation in the overall perception of the space, surpassing pre-existing notions. The impact extends beyond initial impressions, illustrating how the design and experiences within a space play an important role in shaping individuals' perspectives and relationships with that environment.

Being Transdisciplinary

Engaging in transdisciplinary processes facilitates the establishment of shared objectives between professionals and non-professionals, fostering integration and enabling individuals to cultivate new skills (Tress et al., 2006). In the case of both projects under consideration, they were intentionally structured as transdisciplinary endeavors right from their inception.

Operating within an agile development framework, characterized by evolving requirements and solutions through collaboration, these projects embraced a cooperative approach. This involved self-organizing cross-functional or cross-disciplinary teams, as described by King et al. (2020). The evolution of projects unfolded as a collective effort, with individuals possessing common interests, diverse skills, and varied experiences working collaboratively towards the envisioned change. This cooperative process is depicted in figure 33, illustrating the dynamic and inclusive nature of the transdisciplinary approach adopted by these projects.
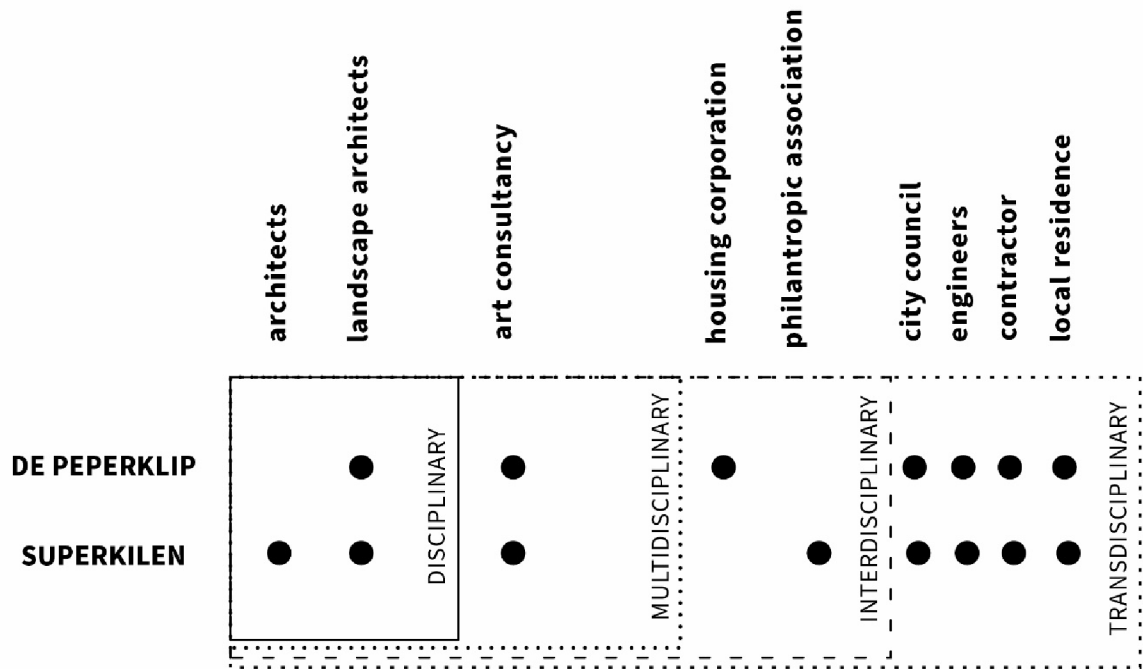
DE PEPERKLIP

SUPERKILEN

Column labels (vertical): architects, landscape architects, art consultancy, housing corporation, philantropic association, city council, engineers, contractor, local residence

Grouping labels: DISCIPLINARY, MULTIDISCIPLINARY, INTERDISCIPLINARY, TRANSDISCIPLINARY

Figure 33. Made by author. (2024). *Trandisciplinarity of case studies.* [Sheme]

Realizing the objective outlined in Goal 11 of the 2030 Sustainable Development Agenda, which advocates for the creation of safe, inclusive, and resilient cities and human settlements, is attainable through participatory processes. By fostering collaboration and collective efforts, individuals can work together to achieve shared goals, contributing to the overall safety, inclusivity, and resilience of urban environments as articulated in the sustainable development agenda.

Being transdisciplinary in the participatory design process within a multicultural environment involves addressing complex challenges in multicultural settings requires input and perspectives from various disciplines, professionals, and community members. By bringing together professionals, experts, and community members with diverse knowledge and skills, these teams can address complex challenges more effectively and generate innovative solutions.

The example of the positive effect due to people integrating is De Peperklip project. Due to bad reputation of unsafe place with high rates of vandalism. Just two years after the construction was finished, the initial maintenance work became necessary, and within 12 years, the renovation was made to the entire block. That were first action of many that will follow. Since then, the debate about whether it would be better to demolish the building breaks out every 5 years. Over the years, many physical and social solutions have been invented, but problems remain.

De Peperklip's renovation later on succeeded due to its exclusive focus on addressing the residents' concerns and needs. This underscores the importance of empathy in design processes, highlighting that taking into account a variety of perspectives fosters not only equity but also cultural sensitivity in the overall design process.

6.2 ANALYSIS OF INTERVIEWS

The interest in participation presents the question on who participates and on which level they participate. According to White (1996), facilitating the participation of heterogeneous populations requires specialized approaches and management techniques. Given the complex social structure of De Peperklip, it is crucial to increase participation from its diverse neighborhoods to achieve overall improvement in urban contexts. The goal of participatory projects like De Peperklip is to foster the inclusion of all residents, empower them to share their opinions, and thereby enhance the project's impact (Resilient Rotterdam, (n.d.)., White, 1996). To better achieve this goal, it is important to identify and address the challenges and opportunities within the participatory processes, using the De Peperklip project as an illustrative example.

To gain a deeper insight into the complexities of the participatory design process, four sets of interviews were conducted with individuals associated with the Rotterdam municipality and a housing corporation. These interviews involved two landscape architecture designers and a project manager from the Rotterdam municipal authorities along with a representative from the housing corporation of De Peperklip. These interviews were held online and followed a semi-structured format, with some questions predetermined and others arising naturally during discussions. Furthermore, during a visit to the site, seven De Peperklip residents were randomly interviewed to obtain their viewpoints on the project.

The implementation of design projects can origin from two main sources: the initiative of government agencies, municipalities, or professionals such as landscape architects and urban planners to instigate changes, or from public movements and community pressure forcing governing bodies to act. These approaches are commonly known as top-down and bottom-up methods. In participatory design projects, understanding the top-down approach and its pros and cons compared to the bottom-up approach is essential. The first step in gaining this understanding was interviewing professional who familiar with both approaches, namely the landscape architect from the municipality who has been involved in different projects, including both bottom-up and top-down strategies (Landscape Architect 1).

De Peperklip is developed as part of "Rotterdam goes for green" project which aims to increase the public urban green area by 20 hectares (Stedenbouw, n.d.). Also, Landscape architect 1 during the interview in October 2021 said that "Rotterdam goes for green" project is not only the program, but also action". Overall vision for the masterplan of the project aims to manage migration, mobility transition, climate change, energy transition, circularity, digital transition, and ageing to establish a platform to initiate projects (Landscape architect 1, personal communication, October, 2021).

The objectives of the "Rotterdam goes for green" initiative and the selection of project areas were determined by the municipality. De Peperklip was specifically identified for inclusion in this project due to criteria like its status as a landmark and its deficiency in greenery, as noted by Landscape Architect 1 in a personal communication in October 2021. This suggests that for De Peperklip project, the initiators encouraged a participatory design process for bottom-up urban developments.

Landscape Architect 1 mentioned that individuals or small groups approached the municipality with initiatives, such as increasing green areas or improving playgrounds in neighbourhoods. The municipality then incorporated these initiatives into its planning process, prioritizing them and eventually combining them into larger-scale projects. This approach allows

for the aggregation of various public initiatives into comprehensive and impactful development projects. However, the process from the initial proposal to integration into a larger project, and ultimately implementation, can take time due to factors such as prioritization, planning, and securing financing.

Sarah White in her discussion questions the "bottom-upness" of a participative process (1996). The participatory process can be argued to be an institutional blueprint which means it is still designed from above and therefore still has top-down characteristics (Marques & Santos, 2004). Additionally, as known from the interview the "bottom-up" process has its institutional boundaries in terms of financial or time limits and has not got the required flexibility to adapt to a certain site context.

A combination of both bottom-up and top-down approaches in participatory design processes often leads to the most successful outcomes. When residents and community stakeholders initiate initiatives and provide input from the bottom-up, and when municipalities or governing bodies support these initiatives with resources, funding, and institutional backing from the top-down, it creates a collaborative and inclusive environment.

Since the realization of De Peperklip was achieved through a 'top-down' approach, it would have been beneficial for developers to consider ways to involve people in the design process. As mentioned previously, the social and physical contexts of each participation process differ, meaning that each approach to integrating people into the planning process has unique circumstances and cannot be compared directly to others. Ignoring the uniqueness of each location and simply relying on standardized participation steps can lead to an abuse of this concept (White, 1996). The unique locational characteristics of De Peperklip include a large population with diverse backgrounds in culture, education, and language (Vestia representative, personal communication, October 2021).

Landscape architect from the municipality who was directly working with De Peperklip project (Landscape architect 2) shared some insights of the participatory process in the neighbourhood. Firstly, it was mentioned that the process of integrating people was 'very difficult'; people living there have a low socioeconomic status and other problems to prioritize over caring about the greenery of the neighbourhood and biodiversity." (Landscape architect 2, personal communication, October 2021).

The interview participant also noted that the classical methods of involving people in the design process, such as meetings or workshops where organizers ask people what they want to improve, didn't prove effective in the De Peperklip project. Most people simply didn't show up, and those who did primarily expressed a "desire for their children to have a space to play". (Landscape architect 2, personal communication, October 2021).

Taking into account the residents' wishes for a place for children to play, as well as the high number of children in the neighbourhood, organizers decided to involve children in the design process. A drawing workshop was organized for the children, during which they created their drawings. These drawings were then combined and incorporated into the design of the basketball zone. "Children were really proud. So, it was nice," concluded Landscape Architect 2 during the interview in October 2021. Additionally, this meeting was organized not only to involve children but also to inform their parents and relatives about the project and its potential future integration. As the participant mentioned, "We organize these parties and events to attract children in an attempt to engage the elderly and older people. But yes, it's very difficult" (Landscape architect 2, personal communication, October 2021).

There was another attempt to engage people in the design process, as indicated by Landscape Architect 2 during the interview in October 2021. Invitations were also sent out to the residents by mail. According to Sarah White (White, 1996), initiators should be aware of communication barriers that might arise when using indirect communication tools like emails or mail. The participant concluded that the difficulties and failures of this method were related to cooperation and trust between residents and the municipality. 'I think as soon as they see communication from the municipality, they don't like it, so I think at least 50% immediately end up in the trash bin and people don't open it,' noted Landscape Architect 2 during the personal communication in October 2021.

Also, a committee from the municipality knocked on most of the doors on the complex to gather opinions and promote the benefits the residents were seeing from having increased green spaces in their neighbourhood. Additionally, large posters with detailed explanations were hung at street corners. Furthermore, organizers went even further by visiting the neighbourhood around 6 pm on weekdays, a time when people were returning home from work. They engaged with residents, asking questions such as "Do you want this bench here? How do you think that area will be used? How do you like to design we made so far?" (Landscape architect 2, personal communication, October 2021).

"We tried to make it as easy as possible," concluded Landscape Architect 2 during the interview. Even with this personal approach, the expected results weren't achieved. "There are around 1300 people living in this building, so it's really hard to reach everyone," Landscape Architect 2 explained. The organizers encountered additional issues related to the construction of De Peperklip. "The building is so big and has an unusual shape, with many doors. People enter and exit through different ways, and we found out later that not everybody uses the main entrances. It's hard to reach everyone; we tried several entrances," Landscape Architect 2 noted during personal communication in October 2021.

The participatory process aimed to strengthen residents' ownership of greenspaces and include their needs in the design proposals. Seemingly, the design process considered all aspects of boosting residents' participation and could ideally be conducted as a participatory design. However, as indicated by Landscape Architect 2 and the Vestia representative during interviews in October 2021, the meetings conducted after the preparation of the masterplan of the courtyard were not well attended, and the budget allocated to execute the participatory process of residents was insufficient. Landscape Architect 2 mentioned that these meetings were intended to strengthen the ownership of greenspace by the residents, including their needs. When asked, although the residents cared about where their children played or if they had enough open spaces surrounding them, they did not share their opinions on how to make these changes. The participatory project aimed at designing these spaces seemed to be challenged, as the residents didn't have enough time, interest, or compatibility to identify the problems they faced prior to the implementation of the project.

Moreover, the various approaches used to gather opinions did not receive enough feedback; most of the randomly interviewed residents stated that they did not participate in the project. This information was gathered during random interviews with residents conducted during a site visit in October 2021. Only one woman, aged 35-45, mentioned that she participated in the courtyard design project and even pitched an idea to improve the playground space because her son uses the area. Another woman of the same age informed that she was asked about having a designated space for growing vegetables or flowers in the central courtyard design area, to which she

responded negatively, stating that she prefers just green space with some benches. A male participant, aged 25-35, stated that he knew about the project but didn't have time to participate in it. Two other participants, a young man aged 15-25 and a man aged 35-45, mentioned that they learned about the project later on, after it was finalized, and never had the chance to participate. Additionally, two women aged 35-45 mentioned that they had never heard about the project and never got in touch with a representative from either Vestia or the municipality.

These methods of obtaining participation might work well in native neighbourhoods; however, it may be less effective in De Paperclip, possibly due to language barriers and other issues such as residents' lack of time or interest. According to theory, it can be doubted whether the design process actually considers all aspects necessary to gain inhabitants' participation. There might be a lack of attention to location-specific social characteristics.

Apart from these above, it was found that the various focuses of interviewees can vary based on the backgrounds and different roles of the participants in the project. From the perspective of a municipality employee working on the 'Rotterdam Goes for Green' project, the ecological benefits of both the 'Rotterdam Goes for Green' project and De Peperklip were deemed essential. Additionally, there was a future plan to increase awareness among more people in mixed communities like De Paperklip about the importance of urban greening. The participant mentioned, "So what we learned is that it's not always about the amount of square meters; it's also about addressing inequality, and even a small amount of square meters can make a significant change for a street or a neighbourhood. That's something that we learned," noted the "Rotterdam Goes for Green" project participant in October 2021.

However, other municipality employees who interacted with residents during meetings admitted to problems such as budget constraints and time limitations. Landscape Architect 2 during personal communication in October 2021 noted, "Yeah, definitely time was a very big problem. So, you don't have enough time in the project itself to spend sufficient hours on all this participation. You only have a few hours a week for this, so when you are already spending time trying to talk to people, that's the hours of the week already, but you still have to lead a project team, make a design, and handle all the practical aspects as well". They acknowledged that the backcasting planning approach of the design proposals helped residents point out some necessary adjustments, such as reducing the height of the mound in the playground to prevent children from getting injured.

Housing corporation representative pointed to potential reasons for low resident participation, such as 'low social status, poverty, and language barriers,' during interviews in October 2021. Based on the experience and background of the participant, opinion was shared on how to improve the public participation process. Housing corporation representative believed that the most important thing is "creating neighbourhood networks. It is about managing social inequality and poverty as well as language barriers. Additionally, it is important to reduce the gap between social corporation and municipality with the inhabitants" (Housing corporation representative, October, 2021).

In conclusion, the participatory design process for De Peperklip faced some challenges, including low resident engagement, language barriers, and budget constraints. While there was optimism from a macro view, acknowledging positive aspects of the participatory plan, the interviews underscored the need for addressing these difficulties to enhance the effectiveness of future participatory processes.

CHAPTER 7. DISCUSSION AND CONCLUSION

In the current global landscape, approximately 281 million individuals, which is around 3.6% of the world's population, live outside their country of origin, with many forced to migrate due to various factors, including climate change (UN, 2016). This growing trend of migration underscores the importance of green spaces in urban areas, essential for maintaining the vitality of cities faced with densification.

It's crucial to recognize that the perception and significance of a place vary across different societies, shaped by cultural and geographical factors. Therefore, involving people in the design process of urban green spaces is essential. Engaging communities in the planning process is an important approach to solve urban issues worldwide and show the potential possibilities within cities. Cultural nuances can significantly influence interpersonal dynamics within diverse communities, necessitating their inclusion in the planning process.

The objective of this thesis is to answer the main research question.

MRQ: How can civic participation among multinational neighborhoods be encouraged in participatory design processes for urban greening projects?

The sub-research questions are posed because their outcomes hold paramount significance in addressing the central research question.

SRQ1: Which techniques can be used by design professionals navigating the complex dynamics of participatory design processes held in a multicultural environment?

SRQ2: What factors influence community participation in a participatory design processes within multicultural environments in urban greenery projects led by designers?

Obviously the social and spatial context of each participation process will differ, which means that each approach of integrating people into the planning process has unique circumstances and therefore is not similar to any other case. As was highlighted in the Chapter 3 Literature Review, ignoring the uniqueness of each location and just using the standard approved steps of participation can lead to an abuse of this term (White, 1996). By fostering better connections between individuals and their surroundings, urban areas could achieve heightened levels of resilience, ensuring the continued liveability of public spaces.

Chapter 4 of the research provides the theoretical groundwork for the participatory design of urban green spaces within multicultural settings, spearheaded by design professionals. The research draws upon Henri Lefebvre's Right to the City theory, which advocates for urban spaces that prioritize social justice, aiming to decrease social inequality by providing equitable access to resources and opportunities for all residents.

Consequently, participatory design practices revolve around two essential components: the spatial dimension, which emphasizes understanding the connection to a place to inform the design process, and the experiential and knowledge aspect, which focuses on the shared understanding of a place by local inhabitants. As a result, three criteria characterizing space ("nonscaleability" and "socio-spatiality") and experience ("being transdisciplinary") were selected for testing in two case studies, providing novel opportunities for landscape architect, urban designers, and authorities to collaborate on various scales.

The first sub-research question was addressed utilizing the Research on Design methodology, while the second research question was investigated through a series of interviews with diverse stakeholders involved in the participatory design process of the De Peperklip project via Research through Design approach.

7.1. DISCUSSION AND CONCLUSION OF CASE STUDIES

The first research question aimed to examine mechanisms conducive to supporting design professionals in navigating the intricate dynamics of participatory design within multicultural environments. This inquiry involved a comparative analysis of two case studies, selected based on the using a participatory design process within a multicultural context, utilizing urban green spaces as public realms to forge connections among people. The projects completed and documented through diverse materials, including design reports, interviews with various stakeholders, and videos.

The criteria for the comparison assessment were chosen based on location-specific attributes and cultural considerations. Criteria for evaluation included the assessment of public spaces in terms of "nonscaleability" which underscores project specificity to particular locales, and "socio-spatiality" which elucidates the interaction between social dynamics and physical environments, highlighting the significance of user engagement in shaping place identity. Moreover, the experiential and knowledge dimensions were characterized by the concept of "being transdisciplinary" emphasizing the cultivation of integrated knowledge through collaborative processes.
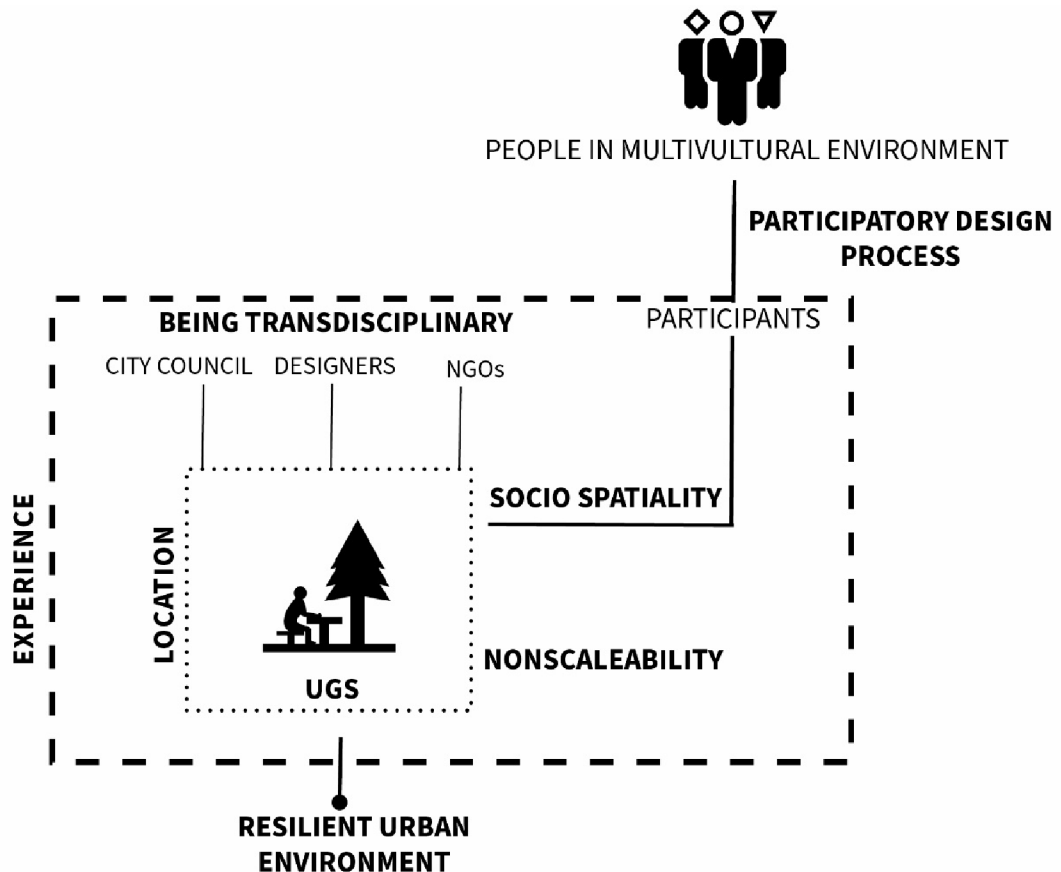
Figure 34. Made by author. (2024). *Importance of integrating criteria into the participatory design process*. [Diagram].

Analysing case studies based on these three emphasized criteria underscores the importance of incorporating them into the participatory design process. "Nonscaleability" highlights that while the central concept of participatory design is people integration, each

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participatory process is distinct, meaning that it is location-specific, and has its own specific goals. This becomes especially critical in multicultural environments, where organizers must be cognizant of the unique features and issues within the neighbourhood to enhance the efficiency of integrating people into the process effectively.

These case studies underscore the widespread adoption of participatory design processes aimed at incorporating individuals from varied cultural backgrounds. Nevertheless, each study employs distinct methods tailored to achieve its specific objectives such as backcasting and roadmapping approaches.

"Socio-spatiality" is important in terms of using people's knowledge about the place and experience with that place and thus how it factors into the design process. With an expected increase in urban populations and in particular the cultural mix of ethnocultural neighborhoods, the likelihood of these challenges exacerbating becomes evident, underscoring the significance of engaging individuals who regularly utilize these spaces in creating solutions. Their firsthand insights into the post-development utilization of these spaces are invaluable.

Emphasizing the key themes raised by participants during these participatory processes within the two case studies, such as concerns regarding the height of play structures potentially endangering children and proposals for creating pedestrian and bike zones to connect different areas of a neighborhood. These suggestions highlight important matters affecting local residents, including child safety and accessibility in public spaces.

Applying "Being transdisciplinary" approaches during participatory design within multicultural environments helps a designer to find the solutions of complex challenges by incorporating input and viewpoints from a range of disciplines, professionals, and community members. By creating teams that include diverse professionals, experts, and community members with varied knowledge and expertise, these efforts can effectively address complex issues and foster the creation of innovative solutions.

It was shown on the example of De Peperklip project where the renovation proved successful only after attention was directed towards addressing the concerns and needs of the residents, following several unsuccessful renovation attempts.

The results of the case studies emphasize the importance of local actions in advancing successful participatory design processes mainly within multicultural neighborhoods. These processes empower community residents by providing them with a platform to voice their needs and preferences, which lead to the creation of more inclusive and responsive public spaces. Additionally, involving local communities in participatory design can also contribute to effective governance by ensuring that decisions are made with input from those directly impacted by them. Therefore, local actions indeed play an important role in both empowering communities and governing effectively through participatory design processes.

Empowering communities within Participatory design process in multicultural environment

The real involving people into the design process of creating urban green areas and considering their wishes and opinions for the future realisation can may be considered as empowering of communities' members. This involvement ensures that diverse groups have a voice in shaping their environments, fostering a sense of ownership and control.

One of the purpose of this study is to emphasize the significance of the participatory design process within multicultural environment and identify criteria that can improve this process for

better results. The criteria of "nonscaleability", "socio-spatiality", and "being transdisciplinary" are shown through case studies analysis to be crucial for effective participatory design. These criteria help ensure that diverse perspectives are considered, helping to create more inclusive and sustainable urban and social environment.

Furthermore, utilizing these criteria within multicultural environments helps people to achieve a sense of control by collaborating with different stakeholders. From the examination of the case studies, it's evident that individuals can contribute their opinion and actively engage in influencing the development of urban green spaces through transdisciplinary participatory approaches, even they still require academic knowledge. This collaborative approach not only empowers communities but also improve a sense of unity and overall purpose in achieving common goals.

Effective governance with Participatory design process in multicultural environment

Promoting the involvement of people in urban design and planning processes is crucial for achieving democratic justice aligned with the goals set forth in the United Nations Sustainable Development Goals. By supporting inclusivity, sustainability, and participation, these aims offer a framework for engaging individuals in actively tackling issues that have direct results for both current communities and future generations.

Effective governance of the criteria "nonscaleability", "socio-spatiality", and "being transdisciplinary" involves fostering inclusive, transparent, and collaborative decision-making processes that prioritize the voices and needs of diverse stakeholders in the creation of urban spaces within multicultural environments.

Governance mechanisms must acknowledge and consider the unique characteristics and context of each location in participatory design based on the nonscaleability criteria. Decisions should prioritize local culture, history, and community needs, avoiding a uniform approach.

Governance frameworks should promote the meaningful integration of social dynamics and physical environments in the design process. Active engagement with community members is essential to understand their interactions with and perceptions of public spaces, contributing to a more comprehensive understanding of socio-spatial dynamics.

Additionally, governance structures should encourage the exchange of ideas, expertise, and perspectives, enabling stakeholders to collectively develop innovative and holistic design solutions that account for social, cultural, economic, and environmental factors.

7.2. DISCUSSION AND CONCLUSION OF INTERVIEWS

The second research question was directed to identify the various factors influencing the design process within multicultural environment in urban greenery projects led by designers. To answer this question the deeper investigation of the project De Peperklip via series of interviews with different landscape architects, project manager, and representative of housing organization as well as some residents were done. Involving several landscape architects aligns with the overarching goal of incorporating diverse perspectives, including those of future users, into this research. The data and findings of this research will provide valuable insights for landscape architects and urban designers engaged in similar projects, aiding them in navigating the complexities of multicultural environments in urban greenery design.

The main purpose of this part of the research was to understand by using a real-life example the difficulties which landscape architects and urban designers could face within participatory design in diverse cultural neighborhood. This understanding is crucial for informing and enhancing future projects aimed at creating comfortable and inclusive spaces for all.

The analysis of interviews highlighted and identified the gaps between theoretical discourse and observable situations in the field of participatory design for public spaces in multinational neighborhoods. The primary focus was on the interaction between the team of professionals guiding the participatory design process and the local residents who participated.

As mentioned, the participatory design process in the De Peperklip project was characterized by a top-down approach, with members of the municipality and the housing organization leading the decision-making process, while residents played a peripheral role. This leaded to the various difficulties of the involving people into the design process.

One of the challenge appeared regarding the cooperation and trust between residents and the municipality, as emphasized during the interview with Landscape Architect 2. This issue was illustrated using the example of sending mailings to residents. According to Landscape Architect 2, it was suggested during the interview that some mail may have been thrown away without being opened, however this is speculative at best.

Based on the analysis of the case studies, it was demonstrated that the design process of the De Peperklip project corresponded to the criteria of 'nonscaleability', 'socio-spatiality', and 'being transdisciplinary', as well as considered all aspects of boosting residents' participation. It could be ideally conducted as a participatory design. However, the interviews revealed that factors such as location, diverse backgrounds, and various socio-economic characteristics were not adequately considered and should be investigated and planned better. Landscape Architect 2, who was directly involved in the De Peperklip project, highlighted the unique shape of the building, which posed challenges in reaching people due to multiple entrances.

The interviews show that the social structure is an extremely complex entity and also to have a higher presence of the residents in a participatory design processes is extremely important when aiming for an overall improvement in this and other urban contexts. Through these processes, it is possible to increase residents' sense of belonging (Maiter et al., 2008), as a comprehensive participatory process encourages residents to share their needs or take part in the design process (Hoekstra & Dahlvik, 2018).

The aimed participatory project in designing the green spaces of the De Peperklip project seemed to be challenged as the residents didn't have enough time, motivation, or capacity to identify the problems they faced prior to the implementation of the project. The interview participants acknowledged that the residents of De Peperklip weren't very active in proposing ideas or communicating their needs. As mentioned by Landscape Architect 2, these meetings were intended to strengthen residents' ownership of greenspace and incorporate their needs. When asked, although the residents care about where their children play or if they have enough open spaces surrounding them, they do not readily share their opinions on how to make these changes. Only after the design proposals were made ready, residents were able to point out some adjustments that would need to be done, such as reducing the height of the mound in the playground, as this could cause kids to roll over and get themselves injured. But generally, they think the design can address residents' desires to some extent due to the local meetings' setting. A participant from the housing corporation directly pointed out the possible issues of limited participation, such as residents' low social status, poverty, and language barriers.

A participatory process is advantageous for building resilience in the urban spaces as it can respond to needs of various groups while informing and involving them in the process of shaping the built environments. From the social perspective, the individuals involved in such a process will have a greater understanding of how decisions about their local environment are made. Visible in the interviews, having little participation in such critical processes made residents feel left out or undervalued in how their opinions were used. For the designer, public participation can be seen as a means of obtaining the best possible brief from the eventual users of the landscape and accessing information about the site and the community which could easily be overlooked in any conventional sort of site survey and also can be a source of inspiration. The scheme produced collaboration is going to have a far greater chance of long-term success than one which has simply been imposed (Thompson, 2003). Also pointed out during the interviews with the representatives from the municipality, some of the social spaces are not used as they don't respond to the needs of residents.

Problems occur when the same model is applied to different contexts that vary in terms of its participants, their education levels and their socio-economic backgrounds, the scope, and timeline of the project. Highlighted in De Peperklip participatory design process, the problem of not having enough participation in the process can be seen as the result of not providing appropriate tools to different stakeholders which would help them to represent their point of view and make a contribution. As the context of participants to these participatory processes changes, the framework that a municipality should use to communicate their proposals should also change and be adapted to increase residents' understanding and to better garner feedback (Oonk et al., 2019).

From the interviews, it was found that the participatory design process needed to be handled carefully during longer periods which would allow participants to comprehend the changes required. During the interviews done for this study, different stakeholders reflected different aims and understanding in regards to the project. When asked to the residents of De Peperklip, the interviews revealed that most people didn't have the opportunity to participate in the process and were only later informed about the design when it was implemented. On the other hand, interviews done with landscape architects that work for the municipality pointed out the attempts that are targeted to include ideas and opinions of the residents ultimately failed due to lack of participation. Interviews done with the housing corporation Vestia also show a pre-set agenda developed for the project that in the end left no time or resources for residents to participate as most of them have very busy lives and are trying to make a living. It is clear that eventually most participants didn't know about the scope of the project and never received an invitation to participate.

Considering the efforts put in by the municipality and the reaction given by the residents, it is clear to point out the complexity of the participatory process and the ground that needs to be established to allow people from different backgrounds and socio-economics to participate. As the context is always unique due to the differences in socio-economic characteristics of the participants, the process needs to be tailored accordingly.

Pointed out in the "Depoliticizing development: The uses and abuses of participation" by Sarah White (White, 1996), there are three steps that could have been followed in addressing non-political participation:

1. Understanding that participatory process is a political issue while identifying if people have a genuine interest in the project or do they only take part in its construction. During the interviews, residents indicated possible other options they wished were realized. Some other

participants also pointed out the fact that some parts of the design is better than their expectations. They just didn't know it then. However, the general theme is towards sharing the process and the steps that would be aimed at making the social spaces of De Peperklip vital to the community.

2. Using, challenging the patterns of dominance is a big part of the process. Pre-set agendas of Vestia, the company started the whole renovation, became an obstacle during the participatory process as it set the agenda and the timeframe for the overall project.

3. Also, participation does not necessarily give people a chance to say. Although the municipality set a participatory process for designing the social spaces, the process was not able to engage the majority of the residents.

Following the analysis of interviews, it is possible to suggest recommendations for enhancing the participatory design process of creating urban green spaces within multicultural environments.

Firstly, ensuring language access is imperative. Communication should be organized in multiple languages to ensure that all participants can understand and express themselves effectively, promoting successful interaction and full engagement. Currently, various methods exist to overcome language barriers, including the provision of multilingual resources and the utilization of language interpreters.

Secondly, to enhance participation rates in the future and enhance the design process, it is important to establish trust. This can be accomplished through transparent communication, attentive listening, and considering the desires and suggestions of all who involved. These efforts will foster an inclusive collaborative process, ultimately fostering a sense of partnership between local participants and organizers of the design process.

What is more, the organization of meetings holds considerable importance in creating the successful execution of participatory design processes. Considering the unique nature of each process, it is essential to adopt flexible meeting formats, including in-person gatherings, online sessions, small group discussions, or workshops. This tailored approach facilitates the accommodation of diverse cultural preferences and scheduling features.

However, it is important to recognize that this customized method of arranging meetings, combined with the necessity for comprehensive site investigations, may consume a significant amount of time. Consequently, project planning should be adjusted to account for these time and budgetary considerations.

Furthermore, it is crucial for organizers of participatory processes to use tools that are easily understandable for participants. Augmented reality (AR) applications offer a viable solution in this regard. The integration of AR into participatory design processes represents a novel method for engaging citizens in decision-making. This is because AR has the capability to present location-specific information and facilitate immersive interactions for the public.

Last, but not least conducting trainings, workshops, and other activities to build community capacity can raise awareness of various issues and contribute to the development of a future vision. This knowledge base can then be leveraged in future participatory design projects, as community members will be more aware of existing problems and better understand the vision concept.

7.3. CHOOSE THE FUTURE: THE DIALOGUE BETWEEN DIFFERENT STAKEHOLDERS IN A PARTICIPATORY DESIGN PROCESS OF URBAN GREENING PROJECTS IN MULTICULTURAL ENVIRONMENT

Participatory design processes are increasingly important in landscape projects as they aim to increase the user's accessibility to the social spaces and connect them with the nature that is proved to be critical to their well-being, although it isn't always the case visible by De Peperklip example. These processes hold a critical importance as they can provide people with a sense of belonging and maintain their surroundings which is important to strengthen urban resilience. In order to improve ownership of the greenspace by the public, the authorities should invest in educating the citizens and introduce better policies that can allow all groups to participate and have a say in shaping the design process. It is critical to identify that there are challenges to a participatory process in socio-economically varying neighborhoods, as their structure is extremely diverse and not transparent to be recognized by all stakeholders. Within the light of the theoretical framework and interviews that are revealing the opinions of the multiple parties, our study here points out to the need to shape these processes in a context conscious manner which will eventually put different stakeholders on an equal platform to exchange ideas and progress.

This research raised the following research question: How can civic participation among multinational neighborhoods be encouraged in participatory design processes for urban greening projects?

Based on the purpose of the main research question this study concludes that

- Participatory design within cultural diverse neighborhoods is unique and complex. Each participation process is influenced by its unique social and physical context, meaning that no two approaches to integrating people into the planning process are alike. Neglecting the features of each location and social context on standardized participation steps can result in unsuccessful outcomes.

- Through comparative analysis of two case-studies, key criteria for evaluating participatory processes, including nonscaleability, socio-spatiality, and being transdisciplinary were tested. The findings underscore the importance of tailoring design processes to specific locales and cultural contexts, as well as the need to incorporate diverse perspectives and expertise.

- Through interviews and detailed analysis of De Peperklip project, it uncovers challenges such as insufficient resident participation, communication barriers, and low social status of residents. The findings highlight the importance of tailored approaches, transparent communication, and trust-building to enhance participatory processes. Recommendations include ensuring language access, fostering trust, flexible meeting organization, user-friendly tools like AR applications, and community capacity-building activities.

The findings of this study offer practical insights to assist professionals to conduct effective participatory design processes for developing urban green spaces in multicultural environments. These results are valuable for landscape architects, urban designers, and other authorities tasked with leading participatory design efforts, particularly in culturally diverse settings.

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